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Ginecología



Dr. Francisco Torres Lear

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

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

Titulación

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Cuatro proyectos de investigación en distintos temas de la especialidad

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Referencias
científicas



Referencias científicas

Adeniyi AA, Ramachandran S, Jevitt CM. Oral Health, Anxiety, Depression, and Stress in Pregnancy: A Rapid Review of Associations and Implications for Perinatal Care. *Int J Environ Res Public Health*. 2024 Dec 29;22(1):32. doi: 10.3390/ijerph22010032. PMID: 39857485; PMCID: PMC11765242.

ABSTRACT

Research demonstrates associations between oral health and specific mental health conditions in the general population, yet these relationships remain understudied during pregnancy, despite pregnancy's profound effects on both oral and psychological well-being. Our rapid review examines current evidence on associations between oral health conditions and psychological states (anxiety, depression, and stress) during pregnancy, aiming to inform and strengthen integrated prenatal care strategies. Following PRISMA-RR guidelines, we conducted a systematic search on OVID Medline, CINAHL, and PsycINFO (January 2000–November 2024) for studies examining relationships between oral health conditions (periodontal disease, dental caries) and psychological status during pregnancy and up to one year postpartum. Systematic screening of 1201 records yielded 22 eligible studies (13 cross-sectional studies, 3 longitudinal cohort studies, 3 comparative studies, 2 prospective studies, and 1 case-control study). Analysis confirmed significant associations between oral health and psychological well-being during pregnancy through three pathways: psychological (dental anxiety directly limits oral healthcare utilization), behavioral (maternal depression reduces oral health self-efficacy), and physiological (elevated stress biomarkers correlate with periodontal disease, and periodontal therapy is associated with reduced salivary cortisol). These interactions extend intergenerationally, with maternal psychological distress showing significant associations with children's caries risk. Evidence suggests interactions between oral health conditions and psychological states during pregnancy, warranting integrated care approaches. We recommend: (1) implementing combined oral-mental health screening in prenatal care, (2) developing interventions targeting both domains, and (3) establishing care pathways that address these interconnections. This integrated approach could improve both maternal and child health outcomes.

Agbor AM, Zencha LN, Essome H, Ndikum CB, Foumane P. Oral Health Status of Pregnant Women Attending Antenatal Clinic in Cameroon. *Int J MCH AIDS*. 2025 May 14;14:e009. doi: 10.25259/IJMA_27_2024. PMID: 40547268; PMCID: PMC12180739.

ABSTRACT

Background and Objective: Pregnancy is characterized by complex physiological and psychological changes that can affect the oral health of women. There is a paucity of literature on the oral health status of pregnant women in Cameroon. The objective of our study was to describe the oral health status of pregnant women attending the Laquintinie antenatal clinic in Douala, Cameroon.

Methods: A descriptive cross-sectional study from January 2021 to June 2021 was conducted involving pregnant women who attended the antenatal clinic at Laquintinie Hospital and provided informed consent. A pretested questionnaire was administered in both French and English. Intraoral and extra-oral examinations were carried out to identify oro-facial pathologies.

Results: Two hundred ninety-four pregnant women participated in our study, with ages ranging from 17 to 45 years (mean age = 26 years ± 5.1 standard deviation). Of these 144 (51.7%) were employed, 195 (70%) were married, and 168 (60.6%) had tertiary education. More than 20 (70%) were multiparous, and 111 (40%) were in the first trimester of pregnancy. Three-quarters, 210 (75%), had good knowledge of tooth cleaning, 182 (65.2%) brushed their teeth once daily, and 189 (68%) brushed only in the morning. Only a few 9 (3.2%) knew how to take care of their baby's teeth, and 84 (30.1%) had been to a dentist. Halitosis was observed in 82 (29.3%), and all our participants had calculus deposits. The predominant oral pathologies were dental caries 168 (60.2%), gingivitis 143 (51.3%), and periodontitis 126 (45.2%). A third, 92 (33%) of the women had swelling of the gums during pregnancy, while 68 (24.5%) did not experience any change. In addition, 62 (22.2%) experienced bleeding, 43 (15.4%) pain, 10 (3.6%) ulcerations, and 10 (3.6%) epulis (pyogenic granuloma). Three out of four 210 (75.3%) of the women needed restoration for carious lesions.

Conclusion and global health implications: The oral health status of pregnant women in the Laquintinie antenatal clinic was poor, with a higher prevalence of dental caries and periodontal diseases ranging from mild to severe gingivitis and gingival epulis.

AlGhamdi SA, Altowairqi K, Altowairqi YG, Alkharobi H, Alfayez E, Mansouri R, Aljahdali B, Badahdah A, Alqarni NM, Qumusan GS, Alrafiah A. Health Effects of Oral Contraceptives on Periodontal Disease and Gingivitis: A Cross-Sectional Questionnaire-Based Study Among Saudi Women in Jeddah. *Clin Cosmet Investig Dent*. 2023 Oct 20;15:237-244. doi: 10.2147/CCIDE.S431814. PMID: 37881241; PMCID: PMC10595954.

ABSTRACT

Background: Sex hormones strongly influence the health and ailment of the oral cavity. For instance, a woman's oral health is influenced by her menstrual cycle, menopause, pregnancy, and usage of oral contraceptives. The use of various therapeutic medication results in intraoral alterations. Oral contraceptive pills (OCPs) are among the drugs that produce intraoral alterations. The study's objective was to evaluate attitudes and oral health conditions of Saudi women's utilizing OCPs in Jeddah, Saudi Arabia.

Methods: A cross-sectional questionnaire-based study was conducted among Saudi women in Jeddah, Saudi Arabia. The self-administered questionnaire was made and sent to women to evaluate the attitude and oral health condition of women utilizing OCPs. The women using OCPs were asked to self-administer 17 questions to evaluate attitudes and oral health conditions. The questionnaire had multiple-choice questions and was consisted of four sections.

Results: The number of participants who used contraceptives was 125 (35.9%) women; of them, only 94 (75.2%) used oral contraceptives. The duration of using oral contraceptives mainly was 1-5 years (39.4%), then > 5 years (34.0%), and <1 year (26.6%). Of the 94 women, 34 (36.2%) had gingival diseases, 23 (24.5%) treated their gums; and 13 (13.8%) cleaned their gums at a dental clinic regularly. Times of teeth brushing per day were one time in 32 women (34%), twice in 47 women (50.0%), and three times in 15 (16.0%). Of the



94 women, 4 (4.3%) were smoking, 24 (25.5%) took medication other than OCPs, and 16 (17.02%) had chronic diseases. Common oral complications noticed by participants were gum bleeding after brushing (51.6%), dental caries (25.5%), and oral ulcers (10.6%).

Conclusion: Females on OCPs had a high rate of gingival bleeding, dental caries, and oral ulcers. OCPs users had poor periodontal and gingival health. Establishing an oral hygiene program was necessary to treat gingival and periodontal inflammation that exacerbated by OCPs.

Alkhurayji KS, Althumairi A, Alsuhaimi A, Aldakhil S, Alshalawi A, Alzamil M, Asa'ad F. Pregnant Women's Awareness of Periodontal Disease Effects: A Cross-Sectional Questionnaire Study in Saudi Arabia. *Healthcare (Basel)*. 2024 Dec 1;12(23):2413. doi: 10.3390/healthcare12232413. PMID: 39685035; PMCID: PMC11641118.

ABSTRACT

Background/Objectives: Periodontal disease is an infection of the surrounding and supporting tissues of the teeth. Several associations have been identified for systemic conditions. This study aimed to assess the awareness of pregnant women regarding the link between premature and low-weight births with periodontal diseases.

Methods: Using a cross-sectional design, we collected data from the target participants through the Pregnant Women's Periodontal Awareness Questionnaire, employing a convenience sampling technique between November and December 2023. Statistical analyses were performed using descriptive statistics. The statistical significance of all estimations was set at a p-value of ≤ 0.05 .

Results: Most participants were ≥ 31 years of age (210 participants; 67.3%). The percentage of pregnancies occurring in women who were multigravida was 69.6%. Only 29.5% of the participants were knowledgeable about low-weight and premature births with periodontal diseases. The findings indicate an association between the education level and trimester ($p < 0.05$).

Conclusions: Pregnant women's awareness regarding periodontal disease is low, and one-third of them do not visit dental clinics during pregnancy. Expanding access to dental care and reducing anxiety about treatment outcomes can strengthen the relationship between oral health and general health.

Alnasser BH, Alkhalidi NK, Alghamdi WK, Alghamdi FT. The Potential Association Between Periodontal Diseases and Adverse Pregnancy Outcomes in Pregnant Women: A Systematic Review of Randomized Clinical Trials. *Cureus*. 2023 Jan 1;15(1):e33216. doi: 10.7759/cureus.33216. PMID: 36733569; PMCID: PMC9888319.

ABSTRACT

Preceding studies have demonstrated that periodontitis might increase the liability of adverse pregnancy outcomes such as preterm birth, preeclampsia, low birth weight, and perinatal fatality in pregnant women. Nonetheless, there is no convincing testimony that periodontitis is related directly to adverse pregnancy outcomes in pregnant women. This systematic review intended to assess and review all the available randomized clinical trials that concentrated on the association between periodontal diseases and adverse

pregnancy outcomes, and the impact of periodontal disease therapy on adverse pregnancy outcomes. The databases like Scopus, PubMed, Google Scholar, and Web of Science were consumed to explore relevant and suitable studies after adopting the inclusion and exclusion criteria. The search included articles with no time restrictions and certain keywords were utilized in the databases. The investigation was done through four independent reviewers employing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Twenty-three studies fulfilled the exclusion and inclusion criteria and were used and included in this systematic review. The above-mentioned studies assessed the association between periodontal diseases and adverse pregnancy outcomes and the effect of periodontal disease treatment in reducing the influence of adverse pregnancy outcomes. This systematic review revealed that there is a relationship between periodontitis and adverse pregnancy outcomes, and periodontal treatment has a reducing impact on adverse pregnancy outcomes in pregnant women with periodontitis. Prospect studies are warranted to investigate the relationship between periodontitis and different adverse pregnancy outcomes and to decide the best type and the most effective therapy to treat periodontitis in pregnant women.

AlSharief M, Alabdurubalnabi E. Periodontal Pathogens and Adverse Pregnancy Outcomes: A Narrative Review. *Life (Basel)*. 2023 Jul 13;13(7):1559. doi: 10.3390/life13071559. PMID: 37511934; PMCID: PMC10381683.

ABSTRACT

Periodontal disease is a multi-microbial infection of the teeth-supporting apparatus that manifests as clinical attachment loss and alveolar bone loss. The association between periodontal disease and systemic diseases has been proposed in the literature owing to the former's chronic state of inflammation, and adverse pregnancy outcomes are no exception. As a result of periodontal pathogen invasion, a series of systemic inflammatory and immunologic events affecting the safety of the fetoplacental unit may unfold. This may be further exaggerated by physiologic hormonal and metabolic fluctuations during pregnancy. This can not only negatively affect the gestation period and consequently cause preterm low weight but also complicate the pregnancy via preeclampsia and gestational diabetes. This narrative review article aims to provide a summary of relevant available evidence pertinent to the relationship between periodontal diseases, associated periodontal pathogens and virulence mechanisms mediated by pro-inflammatory cytokines and prostaglandins, and adverse pregnancy outcomes. Furthermore, this article highlights some of the literature addressing the impact of periodontal therapy interventions and pregnancy outcomes.

Alwaeli HA, Al-Jundi SH. Periodontal disease awareness among pregnant women and its relationship with socio-demographic variables. *Int J Dent Hyg*. 2005 May;3(2):74-82. doi: 10.1111/j.1601-5037.2005.00121.x. PMID: 16451386.

ABSTRACT

Certain conditions may have an affect on gingival status and may aggravate pre-existing disease, especially in persons with poor oral hygiene. Pregnancy is one of these conditions. In addition, there is evidence in the literature suggesting an association between periodontal diseases in pregnant women and giving birth to premature, low-birth infants. The purpose of this study was to evaluate the degree of periodontal health knowledge, and awareness, among pregnant women in Jordan. This was carried out by cross-sectional survey using self-administered, structured questionnaires distributed at six maternity care centres in Irbid City. Questionnaire items addressed personal and socio-demographic variables and periodontal health aware-



ness and knowledge of pregnant women. Women (n = 300) were randomly chosen from attendants to these centres. Of the 300 questionnaires distributed, only 275 pregnant women ages 16-45 years with a mean of 29 year responded and were included in the study. Data were analysed by chi-squared test with the level of significance set at (P < 0.05). About one-third of the participants had secondary level of education; it appeared that a minority of the pregnant women had knowledge or ability to identify dental plaque (16.4%) and its harmful effects (22.5%), while most of them (88%) were aware that bleeding gums indicated the presence of periodontal disease. The differences in the responses to knowledge questions were only significant for question number one (What is plaque?) among different educational levels and groups. This study revealed that (71.6%) of the pregnant women knew the main cause of gum disease; however 56% of them do not believe that frequency of teeth brushing should be increased during pregnancy and only 5.1% believed there might be a relationship between gum diseases and premature labour. Knowledge and awareness for pregnant women about their teeth and gingival condition is generally poor. Pregnant women need accurate information about their teeth and oral health. Simple educational preventive programmes on oral self-care and disease prevention before and during pregnancy should be provided to improve oral health.

Arbildo-Vega HI, Padilla-Cáceres T, Caballero-Apaza L, Cruzado-Oliva FH, Mamani-Cori V, Cervantes-Alagón S, Vásquez-Rodrigo H, Coronel-Zubiarte FT, Aguirre-Ipenza R, Meza-Málaga JM, Luján-Valencia SA, Castillo-Cornock TB, Serquen-Olano K. Effect of Treating Periodontal Disease in Pregnant Women to Reduce the Risk of Preterm Birth and Low Birth Weight: An Umbrella Review. *Medicina (Kaunas)*. 2024 Jun 4;60(6):943. doi: 10.3390/medicina60060943. PMID: 38929560; PMCID: PMC11205593.

ABSTRACT

Background: The aim of this review was to evaluate the effects of periodontal disease (PD) treatment in pregnant women to reduce the risk of preterm birth (PB) and low birth weight (LBW) by conducting an umbrella review.

Methods: A comprehensive search for the literature up to April 2024 was conducted across multiple databases including PubMed, Cochrane Library, Scopus, EMBASE, Scielo, Web of Science, Google Scholar, Proquest Dissertations and Theses, and OpenGrey. We specifically targeted systematic reviews (SRs) with or without meta-analyses, irrespective of language or time constraints, focusing on primary studies examining the effect of PD treatment in pregnant women to reduce the risk of PB and LBW. Various types of non-systematic reviews, intervention studies, observational studies, preclinical and basic research, summaries, comments, case reports, protocols, personal opinions, letters, and posters were excluded from consideration. The quality and overall confidence of the included studies were assessed using the AMSTAR-2 tool.

Results: After the initial search, 232 articles were identified, of which only 24 met the selection criteria after exclusion. The majority of these studies indicated that periodontal treatment reduces the risk of PB and LBW.

Conclusions: According to the findings and conclusions drawn from the SRs with a high overall confidence level, PD treatment in pregnant women reduces the risk of PB and LBW.

Asa'ad FA, Rahman G, Al Mahmoud N, Al Shamas E, Al Khuwaileidi A. Periodontal disease awareness among pregnant women in the central and eastern regions of Saudi Arabia. *J Investig Clin Dent*. 2015 Feb;6(1):8-15. doi: 10.1111/jicd.12061. Epub 2013 Aug 15. PMID: 23946249.

ABSTRACT

Aim: The purpose of this study was to assess the knowledge and awareness regarding periodontal disease and its effects on pregnancy among pregnant women in the central and eastern regions of Saudi Arabia.

Methods: In this cross-sectional survey, self-administered, structured questionnaires were distributed to 300 pregnant women who were chosen randomly from attendees of maternity health care centers in the central and eastern regions of Saudi Arabia. The questions were developed from literature reviews of articles. The questionnaire addressed personal and sociodemographic variables, periodontal health awareness, and knowledge of pregnant women. The questionnaire was translated into Arabic and was pretested during the pilot study on a random sample of 50 pregnant women. Data were analyzed by χ^2 -tests, with the level of significance set at P < 0.05.

Results: An overall response rate of 81% was obtained. Approximately 53% had a higher level of education, but only 21% knew how to define dental plaque and 30% knew its harmful effects. Almost 73% stated that gum disease could be prevented through toothbrushing and flossing. Approximately 97% of the respondents knew the negative effect of smoking, while only 12% knew there was a possible relationship between periodontal disease and adverse pregnancy outcomes.

Conclusion: The results of this cross-sectional study found that there is limited knowledge and awareness about periodontal disease and its possible effects on pregnancy among pregnant women attending maternal health care centers in the central and eastern regions of Saudi Arabia.

Bi WG, Emami E, Luo ZC, Santamaria C, Wei SQ. Effect of periodontal treatment in pregnancy on perinatal outcomes: a systematic review and meta-analysis. *J Matern Fetal Neonatal Med*. 2021 Oct;34(19):3259-3268. doi: 10.1080/14767058.2019.1678142. Epub 2019 Oct 21. PMID: 31630597.

ABSTRACT

Objective: To assess the effect of periodontal treatment during pregnancy on maternal, fetal and neonatal outcomes.

Methods: This is a systematic review and meta-analysis of randomized controlled trials that evaluated the effect of treatment of periodontal diseases on pregnancy outcomes. Primary outcome was perinatal mortality. Secondary outcomes were maternal and neonatal morbidity. Outcomes were pooled using fix-effect or random effects models and presented as risk ratio (RR), or mean difference (MD), and 95% confidence interval (CI).



Results: Twenty randomized controlled trials involving 8171 participants were included in this study. Periodontal treatment during pregnancy was associated with significantly decreased risk of perinatal mortality [N = 5942; RR = 0.53 (0.30-0.93); p = .03; heterogeneity (I2) = 0%, Number needed to treat (NNT): 162]. Periodontal treatment during pregnancy reduced risks of preterm birth [N = 7335; RR = 0.78 (0.62-0.98); p = .03; I2 = 72%, NNT = 37]. Periodontal treatment during pregnancy significantly increased birthweight (gram) [N = 4708; MD = 200.79 (63.34-337.24); p = .004; I2 = 93%]. Periodontal treatment during pregnancy was not associated with preeclampsia, gestational diabetes, cesarean section, small for gestational age, or congenital malformations.

Conclusion: Periodontal treatment during pregnancy reduces the risks of perinatal mortality and preterm birth, and improves birth weight.

Boyapati R, Cherukuri SA, Bodduru R, Kiranmaye A. Influence of Female Sex Hormones in Different Stages of Women on Periodontium. *J Midlife Health*. 2021 Oct-Dec;12(4):263-266. doi: 10.4103/jmh.jmh_142_21. Epub 2022 Jan 20. PMID: 35264831; PMCID: PMC8849144.

ABSTRACT

The primary etiologic factor for periodontal diseases is “Dental plaque.” Although pathogenic bacteria in dental plaque are required for the incidence of periodontal disease, a susceptible host is also very important. The susceptibility of the host can be modified by many systemic factors with hormones level being one. The periodontium shows an exaggerated inflammatory response to plaque modified by female sex hormones during puberty, pregnancy, in women taking oral contraceptives, and at the postmenopausal stage. This review provides an in detail analysis of how periodontium is influenced by the fluctuation in sex steroid hormones of females during different phases of their lifetime and to discuss how much the same hormone at different ages and stages shows an exaggerated gingival response to plaque.

Butera A, Maiorani C, Morandini A, Trombini J, Simonini M, Ogliari C, Scribante A. Periodontitis in Pregnant Women: A Possible Link to Adverse Pregnancy Outcomes. *Healthcare (Basel)*. 2023 May 10;11(10):1372. doi: 10.3390/healthcare11101372. PMID: 37239657; PMCID: PMC10218064.

ABSTRACT

Background: Periodontitis develops in 11% of pregnant women, and it is independently linked to severe complications during pregnancy such as preterm birth, low birth weight, and gestational diabetes.

Methods: A literature search (Pubmed/MEDLINE, and Scopus) from 2003 to 2023 was conducted to analyze studies focused on periodontitis and adverse pregnancy outcomes.

Results: 16 articles have been included. Most of the studies showed adverse outcomes, like preterm birth and the low weight of the unborn child, are among the most frequent consequences (respectively 62.5% and 68.7% of articles); pre-eclampsia is also linked to this condition (12.5% of articles); and perinatal mortality (12.5% of articles).

Conclusions: Periodontal disease appears to be associated with adverse events in pregnancy due to the transport of biofilm bacteria into the bloodstream and into placental tissue; what would cause adverse events is the body's immune response to infection.

Carrouel F, Kanoute A, Lvovschi VE, Bourgeois D. Periodontal pathogens of the interdental microbiota in a 3 months pregnant population with an intact periodontium. *Front Microbiol*. 2023 Nov 1;14:1275180. doi: 10.3389/fmicb.2023.1275180. PMID: 38029104; PMCID: PMC10646527.

ABSTRACT

Steroid hormones and the oral microbiota of pregnant women both appear as cumulative risk factors for gingivitis. This cross-sectional study, using real-time PCR, investigated the composition and diversity of the microbiota in interdental spaces of 3 months pregnant women with intact periodontium according the 2018 EFP/AAP classification. Bacteria identified were belonged to the red (*Porphyromonas gingivalis*, *Treponema denticola*, and *Tanerella forsythia*), orange (*Fusobacterium nucleatum*, *Prevotella intermedia*, *Campylobacter rectus*, and *Parvimonas micra*), and green (*Eikenella corrodens* and *A. actinomycetencomitans*) Socransky complexes. Approximately 109.11 bacteria were counted per interdental space in pregnant women. Bacteria from the red complex represented 33.80% versus 62.81% for the orange group versus 3.39% for the green group of the total number spread over the 3 groups. Dietary habits and physical activity did not have a significant impact on interdental microbiota, although a decrease in the median amount of 9 periodontopathogens was observed when fruit and vegetable consumption increased. Pregnant women who brushed their teeth at least twice a day had lower counts of total bacteria and 9 periodontal pathogens than those who brushed less. In 3 months pregnant women at high risk of periodontal disease (>30% bleeding sites), the dendrogram revealed 2 clusters of the 9 periodontopathogens. This provides further support for the “key pathogen” hypothesis, among which *Porphyromonas gingivalis* plays a key role, indicating that specific bacteria in limited quantities can influence the host immune system and convert the microbiota from symbiotic to dysbiotic to induce inflammatory disorder. As a result, this study reported that 3 months pregnant women with healthy periodontium had high levels of interdental bleeding and a dysbiotic microbiota with periodontal pathogens of the Socransky orange and red complexes. These subjects were therefore potentially at increased risk of developing periodontal disease and, consequently, an adverse pregnancy outcome. So, preventive oral prophylaxis measures, in particular individual interdental prophylaxis, should be implemented as soon as pregnancy is established.

Clément C, Bourgeois D, Vitiello F, Perrier H, Tabary A, Carrouel F. Efficacy of Sonic-Powered and Manual Toothbrushes on Plaque-Induced Gingivitis in Pregnant Women: A Randomized Controlled Trial. *Methods Protoc*. 2023 Oct 12;6(5):99. doi: 10.3390/mps6050099. PMID: 37888031; PMCID: PMC10608920.

ABSTRACT

Hormonal changes and physiological alterations in pregnancy increase the susceptibility of the woman to oral diseases such as plaque-induced gingivitis. In individual oral prophylaxis, effective tooth brushing can reduce gingival inflammation. Therefore, it is necessary to update the scientific evidence to identify which type of toothbrush, manual or sonic-powered, is most effective in reducing the incidence of gingivitis in pregnant women. The aim of this clinical trial is to compare the biofilm control effectiveness of two manual



and two sonic toothbrushes in pregnant women. This study is designed as a four-arm, parallel, randomized controlled trial with an allocation ratio of 1:1:1:1. The pregnant woman will be included at 15-18 weeks of amenorrhea and followed for 3 months. The primary outcome will be the change in the incidence of gingival bleeding from a baseline and various follow-up periods of the study. Secondary outcomes measures will be to compare clinical effects of the toothbrushes tested on (i) gingival inflammation, (ii) dental plaque, (iii) gingival attachment and (iv) periodontal pocket; and to assess toothbrush acceptability. Thus, identifying the best device for effective tooth brushing in pregnancy could be helpful in reducing and improving the incidence of gingival inflammation.

Daalderop LA, Wieland BV, Tomsin K, Reyes L, Kramer BW, Vanterpool SF, Been JV. Periodontal Disease and Pregnancy Outcomes: Overview of Systematic Reviews. *JDR Clin Trans Res.* 2018 Jan;3(1):10-27. doi: 10.1177/2380084417731097. Epub 2017 Sep 25. PMID: 30370334; PMCID: PMC6191679.

ABSTRACT

Periodontal disease is very common during pregnancy. Although it has been linked to adverse pregnancy outcomes, systematic reviews have reached discrepant conclusions on these links. Therefore, we conducted a systematic overview of systematic reviews studying the association between periodontal disease and adverse pregnancy outcomes. We searched 6 online databases up to November 2016 and hand-searched references and citations of eligible papers. Systematic reviews of studies comparing pregnancy outcomes among women with and without periodontal disease were eligible for inclusion. Primary outcomes were maternal mortality, preterm birth, and perinatal mortality. Two reviewers extracted data and assessed risk of bias of individual systematic reviews. Findings are described in tabular and narrative form. Twenty-three systematic reviews (including between 3 and 45 studies) were included. None reported the association between periodontal disease and maternal or perinatal mortality. Systematic reviews with the lowest risk of bias consistently demonstrated positive associations between periodontal disease and preterm birth (relative risk, 1.6; 95% confidence interval, 1.3 to 2.0; 17 studies, 6,741 participants), low birth weight (LBW; relative risk, 1.7; 95% CI, 1.3 to 2.1; 10 studies, 5,693 participants), preeclampsia (odds ratio, 2.2; 95% CI, 1.4 to 3.4; 15 studies, 5,111 participants), and preterm LBW (relative risk 3.4; 95% CI, 1.3 to 8.8; 4 studies, 2,263 participants). Based on these figures, estimated population-attributable fractions for periodontal disease were 5% to 38% for preterm birth, 6% to 41% for LBW, and 10% to 55% for preeclampsia. In terms of limitations, as several primary studies did not adjust for confounding, meta-analyses may have overestimated the strength of the associations under study. Due to substantial overlap in included primary studies, we could not aggregate results across reviews. Consistent evidence from systematic reviews with low risk of bias indicates that pregnant women with periodontal disease are at increased risk of developing preeclampsia and delivering a preterm and/or LBW baby (PROSPERO: CRD42015030132). Knowledge Transfer Statement: This study highlights that periodontal disease is an important risk factor for several common adverse pregnancy outcomes. Clinicians should be aware of this link to guide risk selection. Research is needed to develop novel preventive and treatment strategies.

Di Stefano M, Polizzi A, Santonocito S, Romano A, Lombardi T, Isola G. Impact of Oral Microbiome in Periodontal Health and Periodontitis: A Critical Review on Prevention and Treatment. *Int J Mol Sci.* 2022 May 5;23(9):5142. doi: 10.3390/ijms23095142. PMID: 35563531; PMCID: PMC9103139.

ABSTRACT

The skin, oral cavity, digestive and reproductive tracts of the human body harbor symbiotic and commensal microorganisms living harmoniously with the host. The oral cavity houses one of the most heterogeneous microbial communities found in the human organism, ranking second in terms of species diversity and complexity only to the gastrointestinal microbiota and including bacteria, archaea, fungi, and viruses. The accumulation of microbial plaque in the oral cavity may lead, in susceptible individuals, to a complex host-mediated inflammatory and immune response representing the primary etiological factor of periodontal damage that occurs in periodontitis. Periodontal disease is a chronic inflammatory condition affecting about 20-50% of people worldwide and manifesting clinically through the detection of gingival inflammation, clinical attachment loss (CAL), radiographic assessed resorption of alveolar bone, periodontal pockets, gingival bleeding upon probing, teeth mobility and their potential loss in advanced stages. This review will evaluate the changes characterizing the oral microbiota in healthy periodontal tissues and those affected by periodontal disease through the evidence present in the literature. An important focus will be placed on the immediate and future impact of these changes on the modulation of the dysbiotic oral microbiome and clinical management of periodontal disease.

Ebinghaus M, Agricola CJ, Schmittinger J, Makarova N, Zyriax BC. Assessment of women's needs and wishes regarding interprofessional guidance on oral health in pregnancy—a qualitative study. *BMC Pregnancy Childbirth.* 2024 Jul 11;24(1):471. doi: 10.1186/s12884-024-06675-w. PMID: 38992618; PMCID: PMC11238511.

ABSTRACT

Background: Poor oral and dental health due to oral dysbiosis during pregnancy increases the risk for negative pregnancy outcomes. Communicating the importance of oral health is therefore essential in reducing the risk of adverse pregnancy outcomes. Professional guidance could substantially support women's positive perception of their own competence. Information on oral health should be provided by healthcare professionals such as midwives, obstetricians and dentists. The aim of this study was to assess the needs, wishes and preferences of pregnant women in Germany, regarding interprofessional collaboration and guidance on oral health during pregnancy.

Methods: Sources of information, preferences regarding information supply as well as the need for interprofessional collaboration of involved healthcare professions were investigated in six online focus groups with pregnant women. In addition, three expert interviews with a midwife, an obstetrician and a dentist were conducted. The focus groups and interviews were analysed using qualitative content analysis according to Kuckartz.

Results: 25 pregnant women participated in focus groups. Pregnant women in all trimesters, aged 23 to 38 years, were included. Many women did not receive any or received insufficient information on oral health during pregnancy and wished for more consistent and written information from all involved healthcare pro-



viders. The extent of oral health counselling women received, heavily relied on their personal initiative and many would have appreciated learning about the scientific connection between oral health and pregnancy outcomes. An overall uncertainty about the timing and safety of a dental visit during pregnancy was identified. Interviews with experts provided additional insights into the working conditions of the involved healthcare professionals in counselling and emphasised the need for improved training on oral health during pregnancy in their respective professional education as well as thematic billing options in relation to this topic.

Conclusion: Guidance of women on oral health during pregnancy appears to be insufficient. Providing information adapted to the needs, wishes and preferences of women during pregnancy as well as the implementation of this topic in the education of involved healthcare professionals could contribute to an improved prenatal care for pregnant women and subsequently a reduced risk of negative pregnancy outcomes.

Eldessouky HF, Marie M. Nonsurgical Treatment of Periodontitis in Menopausal Patients: A Randomized Control Trial. *Biomed Res Int.* 2024 Mar 13;2024:6997142. doi: 10.1155/2024/6997142. PMID: 38510979; PMCID: PMC10954359.

ABSTRACT

Background: Menopause is typically accompanied by significant systemic and oral manifestations, including hormonal changes and increased susceptibility to periodontal disease, which may involve inflammatory biomarkers like aspartate aminotransferase (AST) and osteocalcin in gingival crevicular fluid (GCF). The study is aimed at evaluating the effectiveness of regular inoculation of polyunsaturated fatty acids (PUFAs) as an adjunctive treatment for menopausal women's periodontitis.

Methods: Twenty elderly women with chronic periodontitis were split evenly into two groups by random assignment. Patients in group II (the research group) were given soft gelatin capsules containing PUFAs to be consumed directly once daily for 12 months, as opposed to group I (the control group), who received soft gelatin capsules containing some olive oil (placebo). Scaling and root planning (SRP) were used to address periodontal disease in all cases.

Results: At baseline, six and twelve months after treatment, clinical indicators and AST and osteocalcin amounts in the GCF were noted. By the conclusion of the research period, all observed clinical measurements had changed significantly and improved. In addition, there had been a significant decrease in AST levels and a nonsignificant decrease in osteocalcin levels in group II compared to group I.

Conclusions: Menopausal women with periodontitis who take omega-3 fatty acid supplements in addition to SRP have better oral health. Significant improvements in clinical indicators and a notable decrease in AST levels within the GCF were observed. However, further research with larger cohorts and extended duration is needed to validate these findings and explain potential mechanisms.

Figuro E, Han YW, Furuichi Y. Periodontal diseases and adverse pregnancy outcomes: Mechanisms. *Periodontol* 2000. 2020 Jun;83(1):175-188. doi: 10.1111/prd.12295. PMID: 32385886.

ABSTRACT

Adverse pregnancy outcomes (APOs) have been defined as (a) pre-term birth, when there is a delivery before 37 completed weeks (<259 days); (b) pre-eclampsia, which is a multisystem disorder of pregnancy characterized by maternal hypertension and proteinuria after the 20th gestational week; (c) low and very low birthweight, depending on whether the weight of the baby is less of 2500 g or <1500 g and (d) the spontaneous death of the fetus with <20 weeks (miscarriage) or between 20 and 36 weeks (stillbirth). In 2012, during the Consensus Report from the Joint EFP/AAP workshop on periodontitis and systematic diseases the role of periodontal diseases on APOs was reviewed. Some years later, this evidence has grown, and an update on the literature regarding the mechanisms related to this potential association (APOs and periodontal diseases) needs to be presented. The two major pathways (direct and indirect) already accepted in 2012 are still valid nowadays. Most evidence published in the last 5 years deals with a strong and solid evidence coming from the direct pathway while there is as scarce new evidence regarding indirect pathway. In this direct pathway, the haematological dissemination of oral microorganisms and their products, would later induce an inflammatory/immune response in the foetal-placental unit. The most plausible route for this direct pathway is the hematogenous transmission through dental bacteremia, although not many new studies dealing with bacteremia has been performed lately.

Foroughi M, Torabinejad M, Angelov N, Ojcius DM, Parang K, Ravnan M, Lam J. Bridging oral and systemic health: exploring pathogenesis, biomarkers, and diagnostic innovations in periodontal disease. *Infection.* 2025 May 26. doi: 10.1007/s15010-025-02568-y. Epub ahead of print. PMID: 40418274.

ABSTRACT

Purpose: This narrative review explores the multifaceted links between periodontal diseases (gingivitis and periodontitis) and systemic health conditions, including cardiovascular disease, diabetes, adverse pregnancy outcomes, Alzheimer's disease, cancers, rheumatoid arthritis, and respiratory infections. It aims to synthesize evidence on how local oral infections exert systemic effects and evaluate the potential of diagnostic technologies to monitor these interactions.

Methods: This narrative review synthesizes current scientific literature on periodontal disease pathogenesis, focusing on key pathogens (e.g., *Porphyromonas gingivalis*, *Fusobacterium nucleatum*) and their roles in driving local and systemic inflammation via virulence factors and microbial dysbiosis. It examines biomarker-based diagnostic approaches (e.g., IL-1 β , TNF- α , microbial DNA) in saliva, blood, and gingival crevicular fluid (GCF) and evaluates current and emerging diagnostic tools (e.g., ELISA, PCR, lateral flow assays, biosensors, microfluidics).

Results: The review highlights that periodontal pathogens contribute to systemic disease through complex mechanisms including persistent inflammation (driven by cytokines like IL-1 β , TNF- α), endotoxemia (via LPS, noting pathogen-specific structural variations impacting immune response), molecular mimicry, and immune modulation. Current diagnostic methods provide valuable information but often face limitations in



speed, portability, and multiplexing capability needed for comprehensive point-of-care assessment. Emerging technologies, particularly multiplex platforms integrating biosensors or microfluidics, demonstrate significant potential for rapid, user-friendly analysis of multiple biomarkers, facilitating earlier detection and personalized risk stratification, especially in high-risk populations.

Conclusion: Periodontal diseases significantly impact systemic health via intricate microbial and inflammatory pathways. The complexity of these interactions necessitates moving beyond conventional diagnostics towards integrated, advanced technologies. Implementing rapid, multiplex biomarker detection platforms within a multidisciplinary healthcare framework holds the potential to revolutionize early detection of linked conditions, improve personalized management strategies, and ultimately reduce the systemic burden of periodontal disease.

Gare J, Kanoute A, Orsini G, Gonçalves LS, Ali Alshehri F, Bourgeois D, Carrouel F. Prevalence, Severity of Extension, and Risk Factors of Gingivitis in a 3-Month Pregnant Population: A Multicenter Cross-Sectional Study. *J Clin Med.* 2023 May 8;12(9):3349. doi: 10.3390/jcm12093349. PMID: 37176789; PMCID: PMC10179599.

ABSTRACT

The scope of this study was to assess the prevalence, severity of extension, and risk factors of gingivitis among pregnant women. In this cross-sectional study, 220 nulliparous women at 3 months of pregnancy were recruited in 2022 at the first obstetrical visit in Dakar, Senegal. Demographic characteristics, lifestyle habits, prenatal clinical status, and oral clinical parameters were recorded. Multivariable logistic regression modeling was used to assess relationships between gingivitis and risk factors. Eighty-eight percent of women had gingivitis, 15% were classified as moderate and 73% as severe. A total of 66.7% (95% CI [28.8-92.1]) of the sites had bleeding on interdental brushing. The odds for gingivitis decreased significantly for women consuming more than five portions of fruits and vegetables per day (OR = 0.15; 95% CI [0.03-0.66]) and increased in women who had a professional activity (OR = 6.75; 95% CI [1.27-35.87]) and high education. Concomitantly, the percentage of dental plaque (OR = 131.6; 95% CI [10.80-1619.71]) and the severity of clinical attachment loss (OR = 7.70; 95% CI [3.16-18.92]) were important risk factors. Inverse associations were observed with increasing body mass index (OR = 0.76; 95% CI [0.63-0.93]). Our results underline that gingivitis cases and bleeding were particularly high among 3-month pregnant women. Literacy and adequate oral hygiene actions to modify behaviors and to achieve meticulous biofilm disorganization could make a favorable change in the gingival health outcome. Additionally, further research is necessary to precisely determine the role of biofilm-induced gingivitis and systemic-induced gingivitis in improving gingival conditions.

Gomulinski S, Gandillot V, Valet F, Agossa K, Huck O, Kerner S, Bouchard P, Carra MC. What Do Patients Prefer in Periodontal and Implant Therapy? A Scoping Review. *J Periodontal Res.* 2025 May 12. doi: 10.1111/jre.13412. Epub ahead of print. PMID: 40353297.

ABSTRACT

Aims: Understanding and integrating patients' preferences into clinical practice can enhance personalized care, improve patient's adherence to treatment, and lead to better therapeutic outcomes. The aim of this scoping review was to map the existing literature investigating patients' preferences in periodontal and implant therapy while identifying key areas for future research and development.

Methods: Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) guidelines, an electronic search was conducted in four databases (PubMed, Google Scholar, Cochrane Library, and ScienceDirect) in July 2024 to identify studies evaluating patients' preferences for periodontal and implant therapy.

Results: The literature search yielded 384 studies, of which eight articles met the inclusion criteria. These studies were conducted between 2003 and 2019 in Brazil, China, Austria, Italy, Germany, Canada, USA, Chile, France, Spain, and Portugal. A total of 1642 patients were included. Preferences were assessed using various quantitative and mixed methodologies. Results indicate a strong preference for treatments aimed at preserving teeth, favoring conservative approaches. When teeth cannot be restored, most patients prefer an implant-supported fixed partial denture to avoid damaging adjacent teeth with a conventional tooth-supported fixed partial denture. In this context, treatment predictability is ranked as the most important factor. While no sociodemographic factors appeared to be associated with preferences in periodontal treatments, several predictors were identified for dental implant therapy. Younger patients, women, individuals with higher education levels, and those with high perceived dental health showed a higher willingness to pay for dental implants.

Conclusion: The literature on patients' preferences in periodontal and implant therapies is scarce. Several trends are identified but further longitudinal studies are needed to explore patients' preferences over time and the role of sociodemographic and cultural segmentation criteria.

Greenberg JM, Romero R, Winters AD, Galaz J, Garcia-Flores V, Arenas-Hernandez M, Panzer J, Shaffer Z, Kracht DJ, Gomez-Lopez N, Theis KR. Microbiota of the Pregnant Mouse: Characterization of the Bacterial Communities in the Oral Cavity, Lung, Intestine, and Vagina through Culture and DNA Sequencing. *Microbiol Spectr.* 2022 Aug 31;10(4):e0128622. doi: 10.1128/spectrum.01286-22. Epub 2022 Aug 2. PMID: 35916526; PMCID: PMC9430855.

ABSTRACT

Mice are frequently used as animal models for mechanistic studies of infection and obstetrical disease, yet characterization of the murine microbiota during pregnancy is lacking. The objective of this study was to characterize the microbiotas of distinct body sites of the pregnant mouse—vagina, oral cavity, intestine, and lung—that harbor microorganisms that could potentially invade the murine amniotic cavity, thus leading to adverse pregnancy outcomes. The microbiotas of these body sites were characterized through anoxic, hypoxic, and oxic culture as well as through 16S rRNA gene sequencing. With the exception of the vagina, the cultured microbiotas of each body site varied by atmosphere, with the greatest diversity in the cultured microbiota appearing under anoxic conditions. Only cultures of the vagina were comprehensively representative of the microbiota observed through direct DNA sequencing of body site samples, primarily due to the predominance of two *Rodentibacter* strains. Identified as *Rodentibacter pneumotropicus* and *Rodentibacter heylii*, these isolates exhibited predominance patterns similar to those of *Lactobacillus crispatus* and *Lactobacillus iners* in the human vagina. Whole-genome sequencing of these *Rodentibacter* strains revealed shared genomic features, including the ability to degrade glycogen, an abundant polysaccharide in the vagina. In summary, we report body site-specific microbiotas in the pregnant mouse with potential ecological parallels to those of humans. Importantly, our findings indicate that the vaginal microbiotas of pregnant mice can be readily cultured, suggesting that mock vaginal microbiotas can be tractably generated and maintained for experimental



manipulation in future mechanistic studies of host vaginal-microbiome interactions. **IMPORTANCE** Mice are widely utilized as animal models of obstetrical complications; however, the characterization of the murine microbiota during pregnancy has been neglected. Microorganisms from the vagina, oral cavity, intestine, and lung have been found in the intra-amniotic space, where their presence threatens the progression of gestation. Here, we characterized the microbiotas of pregnant mice and established the appropriateness of culture in capturing the microbiota at each site. The high relative abundance of *Rodentibacter* observed in the vagina is similar to that of *Lactobacillus* in humans, suggesting potential ecological parallels. Importantly, we report that the vaginal microbiota of the pregnant mouse can be readily cultured under hypoxic conditions, demonstrating that mock microbial communities can be utilized to test the potential ecological parallels between microbiotas in human and murine pregnancy and to evaluate the relevance of the structure of these microbiotas for adverse pregnancy outcomes, especially intra-amniotic infection and preterm birth.

Hung M, Kelly R, Mohajeri A, Reese L, Badawi S, Frost C, Sevathas T, Lipsky MS. Factors Associated with Periodontitis in Younger Individuals: A Scoping Review. *J Clin Med.* 2023 Oct 10;12(20):6442. doi: 10.3390/jcm12206442. PMID: 37892578; PMCID: PMC10607667.

ABSTRACT

Periodontitis is a disease that affects many young adults, and if left untreated, it can have lasting and permanent effects on an individual's oral health. The purpose of this scoping review was to review the recent literature to identify factors that place young individuals at risk of stage II or III periodontitis. Using the PRISMA guidelines for scoping reviews, three databases were systematically searched for peer-reviewed human studies published in English that investigated risk factors associated with stage II and/or III periodontitis in individuals less than 40 years of age. This review excluded abstracts, literature reviews, including narrative, scoping, and systematic reviews and meta-analyses, conference proceedings, letters to the editor, and editorials. The authors then extracted data from the relevant studies using a predefined form to summarize the aims, design, results, risk factors examined, and the type and severity of periodontitis. Among a total of 2676 articles screened, only three articles met the review's inclusion criteria. Of these articles, one was a longitudinal case-control study and two were cross-sectional studies. Identified risk factors associated with stage II or III periodontitis included self-reported bleeding when brushing, low bone mineral density, being overweight, and smoking in young adults. Of note, only three studies met the inclusion criteria, suggesting a gap in the research literature.

Ibraheem SA, Afolabi OA, Oveh R, Chukwuemeka A, Dabar A, Nwaokorie FO, Salako AO, Gbaja-Biamila TA, Owotade FJ, Akinsolu FT, Eleje GU, Ezechi OC, Foláyan MO. Periodontal diseases among pregnant adolescents and young women in Nigeria: a scoping review. *BMC Oral Health.* 2025 Jun 6;25(1):936. doi: 10.1186/s12903-025-06004-3. PMID: 40481458; PMCID: PMC12144776.

ABSTRACT

Background: Gingivitis increases the risk of adverse pregnancy outcomes. The study aimed to map the evidence of periodontal diseases in pregnant adolescents and young adults in Nigeria.

Methods: This scoping review was registered on the Open Science Framework (registration DOI <https://doi.org/10.17605/OSF.IO/HVCD5>). A literature search was conducted in August 2024 in two electronic databases (Web of Science, PubMed), and EBSCO, and Google Scholar for articles written in English reporting periodontal diseases in pregnant adolescents (15-19 years) and young adults (20-24 years) in Nigeria following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR). This review excluded abstracts, literature reviews, conference proceedings, letters to the editor, and editorials. Information extracted from the publications that met the inclusion criteria were the study design, study location, sample size, gestation stage, prevalence of periodontal diseases, and identified risk factors for periodontal diseases. A descriptive analysis of the extracted data was conducted.

Results: Among the 768 articles screened, no study met the eligibility criteria. However, four studies reported on risk factors for periodontal diseases in a sample of 1066 pregnant women age < 20 years to > 40 years that included 202 (18.9%) pregnant adolescents and young adults. The prevalence of periodontal diseases ranged from 45.8 to 100%. One study reported that the highest score of healthy gingivae was among the 20-24 age group; one study reported that prevalence of gingivitis increased with increasing trimester; another reported the highest prevalence of gingival bleeding and the lowest prevalence of calculus in the first trimester, while one study could not establish a statistically significant relationship between periodontal diseases and gestational age. The four studies were conducted in two of Nigeria's six geopolitical zones, and all were hospital-based.

Conclusion: The lack of generalizable studies on risk factors for periodontal diseases among pregnant adolescents and young adults in Nigeria limits access to evidence for policy and program design. There is a need for broader, representative research to address these gaps.

Isola G, Santonocito S, Lupi SM, Polizzi A, Sclafani R, Patini R, Marchetti E. Periodontal Health and Disease in the Context of Systemic Diseases. *Mediators Inflamm.* 2023 May 13;2023:9720947. doi: 10.1155/2023/9720947. PMID: 37214190; PMCID: PMC10199803.

ABSTRACT

During recent years, considerable progress has been made in understanding the etiopathogenesis of periodontitis in its various forms and their interactions with the host. Furthermore, a number of reports have highlighted the importance of oral health and disease in systemic conditions, especially cardiovascular diseases and diabetes. In this regard, research has attempted to explain the role of periodontitis in promoting alteration in distant sites and organs. Recently, DNA sequencing studies have revealed how oral infections can occur in distant sites such as the colon, reproductive tissues, metabolic diseases, and atheromas. The objective of this review is to describe and update the emerging evidence and knowledge regarding the association between periodontitis and systemic disease and to analyse the evidence that has reported periodontitis as a risk factor for the development of various forms of systemic diseases in order to provide a better understanding of the possible shared etiopathogenetic pathways between periodontitis and the different forms of systemic diseases.



Jakovljevic A, Slijivancanin Jakovljevic T, Duncan HF, Nagendrababu V, Jacimovic J, Aminoshariae A, Milasin J, Dummer PMH. The association between apical periodontitis and adverse pregnancy outcomes: a systematic review. *Int Endod J.* 2021 Sep;54(9):1527-1537. doi: 10.1111/iej.13538. Epub 2021 May 28. PMID: 33908039.

ABSTRACT

Background: The association between adverse pregnancy outcomes (APOs) and maternal apical periodontitis remains unclear as it has not been examined rigorously or reviewed systematically.

Objective: To systematically review and critically evaluate the available evidence on the association of maternal apical periodontitis with several APOs.

Methods: A literature search was conducted using the following electronic databases: Clarivate Analytics' Web of Science, Scopus, PubMed, and Cochrane Central Register of Controlled Trials (CENTRAL), from inception to 25 February 2021, with no language restrictions. Observational studies including longitudinal clinical trials, cohort, case-control and cross-sectional studies of prospective and retrospective design were included. Articles with duplicate or overlapping results, abstract-only papers, case reports, case series, animal studies and reviews were excluded. Two independent reviewers were involved in study selection, data extraction and appraising the included studies; disagreements were resolved by a third reviewer. The Newcastle-Ottawa Scale (NOS) and the adapted form of the NOS were used to assess the quality for case-control and cross-sectional studies, respectively.

Results: Two case-control and one cross-sectional study were included in the current review. The included studies were published between 2015 and 2017, with a total of 1187 participating individuals with an approximate age range of 15 to 40 years. As the included studies reported different outcomes, the heterogeneity of data prevented a meta-analysis being undertaken. The overall quality of the evidence was 'Fair' for two out of three included studies, while one study was categorized as 'Good'.

Discussion: Two out of three included primary studies had a substantial number of methodological inconsistencies and flaws, and therefore caution should be exercised in interpreting the results of this systematic review because several important covariates were not considered in the original investigations.

Conclusion: Based on a limited volume and 'Fair' and 'Good' quality of evidence, a positive association between maternal apical periodontitis and APOs was observed. However, more 'Good' quality clinical studies are needed to confirm the results of the current review.

Jawed STM, Tul Kubra Jawed K. Understanding the Link Between Hormonal Changes and Gingival Health in Women: A Review. *Cureus.* 2025 Jun 3;17(6):e85270. doi: 10.7759/cureus.85270. PMID: 40462880; PMCID: PMC12131131.

ABSTRACT

Sex hormones, particularly estrogen and progesterone, undergo continuous fluctuations throughout a woman's life, beginning at puberty and extending through the menstrual cycle, pregnancy, and menopause. These hormonal variations significantly influence gingival health, leading to various periodontal conditions.

During puberty, elevated levels of estrogen and progesterone enhance blood circulation to the gingival tissues, increasing their sensitivity to plaque and resulting in puberty gingivitis. This condition is characterized by gingival enlargement, redness, and bleeding. Throughout the menstrual cycle, hormonal fluctuations can cause menstrual gingivitis, presenting as inflamed and bleeding gums, typically occurring prior to menstruation and subsiding thereafter. Pregnancy induces substantial hormonal changes, with heightened estrogen and progesterone levels exacerbating gingival inflammation. This often leads to pregnancy gingivitis, marked by swelling, bleeding, and tenderness of the gums. In some cases, a localized overgrowth known as a pyogenic granuloma or "pregnancy tumor" may develop on the gingiva. The use of oral contraceptives, which alter hormonal levels, has been associated with increased gingival inflammation and exudate, similar to the effects observed during pregnancy. Menopause brings a significant decline in estrogen levels, leading to various oral health issues such as dry mouth (xerostomia), a burning sensation in the mouth, and an increased risk of osteoporosis affecting the alveolar bone supporting the teeth. These changes contribute to a heightened susceptibility to periodontal diseases in post-menopausal women. The influence of estrogen and progesterone on the immune response, oral microbial composition, bone density, and enzymes like collagenase plays a crucial role in modulating gingival inflammation and the risk of periodontal diseases. Understanding these hormonal impacts is essential for developing effective prevention and treatment strategies for maintaining optimal gingival health in women across different life stages.

Kamal Asaad N, Abbood HM. Comparing gingival inflammation and salivary acidity to hormonal variation during menstruation. *Saudi Dent J.* 2023 Mar;35(3):251-254. doi: 10.1016/j.sdentj.2023.02.001. Epub 2023 Feb 20. PMID: 37091273; PMCID: PMC10114131.

ABSTRACT

Introduction: Hormonal changes are associated with healthy female in different stages of her life, such as menarche, pregnancy, and menopause. The main female hormones (i.e., Estrogen and progesterone) act as modulators and effectors during different phases of menstrual cycle. Additionally, these hormones were shown to affect the body inflammatory status. Few studies addressed gingivitis and female hormones. Although gingivitis main cause is dental biofilm, female hormones might modulate this inflammation. If no treatment provided, gingivitis might proceed to periodontitis and alveolar bone destruction may appear.

The study Aim: was to assess the changes in gingival inflammation, and salivary pH in relation to changes in hormonal levels during different menstrual phases in young females.

Method: 25 healthy young females with regular menstrual cycles were included. The volunteers were invited to visit the clinic during their 2nd day of menstrual cycle (menses phase (MP)). During the visit, plaque index (PLI) and gingival index (GI) were scored. Additionally, salivary pH was calculated. Follow-up readings were taken on the 20th day of menstruation (pre-menstrual phase (PMP)). The difference in PLI, GI and salivary pH was analysed using t-test and chi-square test.

Results: The study showed that PLI and GI increased statistically significantly with increasing levels of female hormones during PMP and decreased during MP (P-value = 0.012 for PLI and 0.0003 for GI). Salivary pH decreases slightly during PMP and saliva becomes more alkaline during MP (P-value = 0.015).



Conclusion: The study showed increased gingival inflammation and plaque accumulation during the premenstrual period. It is recommended to raise awareness of gingival inflammation among adult females to prevent progressive changes of periodontitis. However, due to the limited sample size of this study, a comprehensive population-based study is needed to support the findings.

Khan NS, Craven R, Rafiq A, Rafiq A. Treatment of periodontal disease in pregnancy for the prevention of adverse pregnancy outcomes: a systematic review of systematic reviews. *J Pak Med Assoc.* 2023 Mar;73(3):611-620. doi: 10.47391/JPMA.6432. PMID: 36932766.

ABSTRACT

Objective: To assess the systematic reviews and meta-analyses investigating whether or not periodontal treatment in pregnancy was effective in reducing the adverse pregnancy outcomes of preterm birth, low birth weight, preterm low birth weight, stillbirth, foetal growth restriction, and pre-eclampsia.

Methods: The umbrella review was conducted on May 30, 2021, and comprised search of electronic databases MEDLINE, EMBASE, Cochrane Database of Systematic Reviews via Ovid and CINAHL via EBSCO for all systematic reviews and meta-analyses, regardless of the publication date, of randomised controlled trials which investigated the effects of periodontal treatment during pregnancy in preventing or reducing the frequency of at least one adverse pregnancy outcome. The selected studies were subjected to quality assessment and narrative synthesis.

Results: Of the 110 studies found, 17(15.5%) met the inclusion criteria. Of them, quality assessment was high for 1(5.9%), moderate 14(82.3%), and low 2(11.8%). A total of 8(47%) studies demonstrated an association with low birth weight, 7(41.2%) with preterm birth, 3(17.6%) with preterm low birth weight, 1(5.9%) with small for gestational age, and 1(5.9%) with stillbirth, while no study demonstrated any association with pre-eclampsia.

Conclusions: Differential findings provided unclear evidence, but periodontal therapy in pregnancy is still recommended as it causes no harm and reduces the bacterial burden in periodontal disease.

Kim MY, Pang EK. Relationship between periodontitis and systemic health conditions: a narrative review. *Ewha Med J.* 2025 Apr;48(2):e27. doi: 10.12771/emj.2025.00101. Epub 2025 Apr 14. PMID: 40703374; PMCID: PMC12277508.

ABSTRACT

This review examines the bidirectional relationship between periodontitis and systemic health conditions, offering an integrated perspective based on current evidence. It synthesizes epidemiological data, biological mechanisms, and clinical implications to support collaborative care strategies recognizing oral health as a key component of overall wellness. Periodontitis affects 7.4% to 11.2% of adults worldwide, and its prevalence increases with age. Beyond its local effects, including gingival inflammation, periodontal pocket formation, and alveolar bone loss, periodontitis is associated with various systemic conditions. Emerging evidence has established links with obesity, diabetes mellitus, cardiovascular disease, chronic kidney disease, inflammatory bowel disease, rheumatoid arthritis, respiratory diseases, adverse pregnancy outcomes, certain malignan-

cies, neurodegenerative diseases, psychological disorders, and autoimmune conditions. These associations are mediated by 3 primary mechanisms: dysbiotic oral biofilms, chronic low-grade systemic inflammation, and the dissemination of periodontal pathogens throughout the body. The pathophysiology involves elevated levels of pro-inflammatory cytokines (including interleukin 6, tumor necrosis factor alpha, and C-reactive protein), impaired immune function, oxidative stress, and molecular mimicry. Periodontal pathogens, particularly *Porphyromonas gingivalis*, are crucial in initiating and sustaining systemic inflammatory responses. Treatment of periodontitis has demonstrated measurable improvements in numerous systemic conditions, emphasizing the clinical significance of these interconnections. Periodontitis should be understood as more than just a localized oral disease; it significantly contributes to the overall systemic inflammatory burden, with implications for general health. An integrated, multidisciplinary approach to prevention, early detection, and comprehensive treatment is vital for optimal patient outcomes. Healthcare providers should acknowledge oral health as an essential element of systemic well-being.

Kredig C, Peuckert E, Schmidtman I, Drechsler T, Erbe C. Oral health in adolescents: periodontal inflammatory biomarkers during orthodontic clear aligner therapy. *Clin Oral Investig.* 2025 Mar 5;29(3):168. doi: 10.1007/s00784-025-06212-9. PMID: 40042542; PMCID: PMC11882737.

ABSTRACT

Objectives: This prospective study aimed to evaluate periodontal inflammation in adolescents undergoing orthodontic treatment with clear aligners (Invisalign® Teen, Align Technology, San Jose, CA, USA). Key objectives included assessing the presence of 11 periodontitis-associated marker bacteria, active matrix metalloproteinase-8 concentrations in sulcular fluid, and the influence of IL-1 polymorphism genotypes on periodontal health.

Materials and Methods: Fifty adolescent patients (13.3 ± 1.8 years) with mixed and permanent dentition participated. Gingival crevicular fluid samples were analyzed at multiple time points: before, during, and one year after aligner treatment. Periodontal health was assessed using the Gingivitis Index and the Modified Quigley-Hein Index. Genotypic analysis of IL-1 polymorphism was also performed. Statistical analyses included mixed linear models and generalized linear models to explore correlations.

Results: All combinations of IL-1 polymorphism genotypes were found in the sample. No significant increase in periodontal inflammation or aMMP-8 concentrations was observed over the treatment period. Marker bacteria from the red and orange-associated complexes remained at low levels, while significant changes occurred in the orange and green complexes, particularly *Capnocytophaga* spp. ($p = 0.0042$) and *Fusobacterium* spp. ($p = 0.0365$). GI correlated significantly with aMMP-8 levels ($p = 0.0017$), but no genotype effect on GI was observed. MQH showed associations with pathogens from the orange and green complexes, including *Capnocytophaga* spp. and *Fusobacterium* spp.

Conclusions: Clear aligner treatment in adolescents, including those with an unfavorable genotype, does not increase periodontal inflammation when accompanied by good oral hygiene.

Clinical relevance: Regular periodontal monitoring and hygiene reinforcement is important during orthodontic treatment, especially in adolescent patients.



Liu X, Wang F, Wang X, Luan Q. Impact of body mass index and polycystic ovary syndrome (PCOS) subtypes on periodontal health in Chinese women with PCOS and periodontitis. *Gynecol Endocrinol.* 2024 Dec;40(1):2405097. doi: 10.1080/09513590.2024.2405097. Epub 2024 Sep 21. PMID: 39305479.

ABSTRACT

Background: This study aimed to investigate the impact of body mass index (BMI) and Polycystic Ovary Syndrome (PCOS) subtypes on periodontal parameters in Chinese women with PCOS and periodontitis.

Method: We conducted a retrospective case-control study analyzing data from 88 women with PCOS and 82 healthy controls. Participants were categorized by BMI (<24.0 kg/m² and ≥24.0 kg/m²) and PCOS subtypes. We compared periodontal parameters [including probing depth (PD), gingival bleeding index (GBI)] and reproductive hormone-related parameters.

Results: Women with PCOS and periodontitis had a significantly higher GBI (2.71 ± 0.53) compared to controls (2.25 ± 0.41, p < 0.0001). Among patients with BMI <24.0 kg/m², those with PCOS had a younger age [25.00(5.00) vs. 26.00(6.00) years, p < 0.05], lower PD [3.24(0.55) mm vs. 3.43 (0.48) mm, p < 0.01], and higher GBI [2.63(0.76) vs. 2.23(0.55), p < 0.0001]. For BMI ≥24.0 kg/m², PCOS patients had a higher GBI [2.91(0.36) vs. 2.38(0.59), p < 0.01] but a lower percentage of severe periodontal disease (p < 0.05).

Conclusion: PCOS could potentially worsen gingival inflammation among women already suffering from periodontitis, and a higher BMI might further intensify this correlation.

Liu Z, Li Z, Wang L, Gu Z, Ma L. Bibliometric Analysis of the Knowledge Landscape of Periodontal Disease in Pregnancy: A Noteworthy Multidisciplinary Issue. *J Multidiscip Healthc.* 2023 Dec 8;16:3941-3957. doi: 10.2147/JMDH.S437127. PMID: 38089783; PMCID: PMC10714988.

ABSTRACT

Background: Pregnant women are highly susceptible to periodontal disease due to changes in hormonal and immune levels, which places a huge burden on the healthcare system and requires multidisciplinary interventions. This study aimed to assess the scientific profile and research trends related to periodontal disease in pregnancy through a bibliometric approach.

Methods: Publications about periodontal disease in pregnancy from 2000 to 2022 were extracted from Science Citation Index Expanded. The knowledge networks of countries, institutions, authors, journals, references, and keywords in this field were constructed using the Citespace, VOSviewer, Bibliometrix, and BIBLIOMETRIC.COM platforms. Furthermore, correlations between the characteristics of countries and the number or impact of publications were analyzed.

Results: 1162 original studies and reviews were included. There was a trend toward increased publications and citations in this field. The United States had the highest academic productivity and impact by a significant margin, while correlation analyses indicated that economic power may correlate with national scientific activity. The University of North Carolina and Offenbacher S were the most influential institution and author,

respectively, taking center stage in the collaborative networks. However, only several loose connections between countries or institutions were identified in the global collaborative network analysis. Six of the top ten most productive journals were in Q1 in the Journal Citation Report, and there was intensive interaction between different research subfields, such as immunology, molecular biology, and microbiology. Frontier topics were primarily clustered in two areas: (1) oral microbiology, such as microbiome, oral bacteria, and *Fusobacterium nucleatum*; and (2) public health, such as quality of life, pregnancy outcomes, oral health, obesity, and classification.

Conclusion: Since 2000, periodontal disease in pregnancy is receiving increasingly widespread attention and is rapidly evolving at a multidisciplinary level. Oral microbiological pathogenesis and public health impact-related research deserve more exploration and may be the future direction of research. Enhanced Collaboration and interdisciplinary communication may further facilitate progress in this discipline.

Lo Giudice R, Martinelli C, Alibrandi A, Mondo A, Venezia R, Cannarozzo MG, Puleio F, Pollicino R, Lo Giudice G, Laganà AS. Multicenter Cross-Sectional Study of Oral Health and Hygiene Practices Among Pregnant Women. *J Clin Med.* 2024 Dec 2;13(23):7315. doi: 10.3390/jcm13237315. PMID: 39685772; PMCID: PMC11642594.

ABSTRACT

Background: Hormonal, vascular, and behavioral changes during pregnancy can negatively impact a woman's oral health, resulting in conditions such as gingivitis, dental sensitivity, and caries. Although oral health is critical during pregnancy, it remains frequently overlooked. In this study, the oral health status and hygiene practices of pregnant women attending two university hospitals in southern Italy were evaluated.

Methods: A cross-sectional cohort study was conducted with 72 pregnant women. Data were collected through an anonymous questionnaire that evaluated oral hygiene habits, dental visits, and oral pathologies, followed by a clinical examination. The examination included the assessment of the Decayed, Missing, Filled Teeth (DMFT) index and the Oral Hygiene Index (OHI) scores.

Results: Among the participants, 61% were in their 9th month of pregnancy. The mean DMFT score was 7.9, and the mean OHI score was 3.6. Only 19.4% of participants had visited a dentist in the past 6 months, while 97.2% reported brushing their teeth just once per day. Gingival bleeding was reported by 72.2% of the women, and 38.9% experienced dental sensitivity, with both conditions worsening during pregnancy.

Conclusions: The need for greater oral hygiene education and regular dental care during pregnancy is highlighted in this study. Integrating oral health maintenance into prenatal care programs is essential for preventing pregnancy-related oral diseases and promoting maternal and fetal well-being.



Machado V, Ferreira M, Lopes L, Mendes JJ, Botelho J. Adverse Pregnancy Outcomes and Maternal Periodontal Disease: An Overview on Meta-Analytic and Methodological Quality. *J Clin Med.* 2023 May 23;12(11):3635. doi: 10.3390/jcm12113635. PMID: 37297830; PMCID: PMC10253546.

ABSTRACT

This umbrella review aims to appraise the methodological quality and strength of evidence on the association between maternal periodontitis and adverse pregnancy outcomes (APOs). PubMed, CENTRAL, Web-of-Science, LILACS, and Clinical Trials were searched until February 2023, without date or language restrictions. Two authors independently screened studies, extracted data, performed the risk-of-bias analysis, and estimated the meta-analytic strengths and validity and the fail-safe number (FSN). A total of 43 SRs were identified, of which 34 conducted meta-analyses. Of the 28 APOs, periodontitis had a strong association with preterm birth (PTB), low birth weight (LBW), and gestational diabetes mellitus (GDM), PTB and LBW showed all levels of strength, and pre-eclampsia showed only suggestive and weak strength. Regarding the consistency of the significant estimates, only 8.7% were likely to change in the future. The impact of periodontal treatment on APOs was examined in 15 SRs, 11 of which conducted meta-analyses. Forty-one meta-analyses were included and showed that periodontal treatment did not have a strong association with APOs, although PTB revealed all levels of strength and LBW showed only suggestive and weak evidence. Strong and highly suggestive evidence from observational studies supports an association of periodontitis with a higher risk of PTB, LBW, GDM, and pre-eclampsia. The effect of periodontal treatment on the prevention of APOs is still uncertain and requires future studies to draw definitive and robust conclusions.

Machado V, Botelho J, Proença L, Mendes JJ. Comparisons of Periodontal Status between Females Referenced for Fertility Treatment and Fertile Counterparts: A Pilot Case-Control Study. *Int J Environ Res Public Health.* 2020 Jul 22;17(15):5281. doi: 10.3390/ijerph17155281. PMID: 32707937; PMCID: PMC7432159.

ABSTRACT

Studies investigating the periodontal status of women seeking fertility treatment have never been conducted. The purpose of this pilot study was to compare the periodontal status among females referenced to a Fertility Clinic (FC) when compared to matched females from a representative regional epidemiological sample. Our secondary aims were to investigate if periodontal clinical measures differ between these two groups of females and how they impact on oral health-related quality of life (OHRQoL). We enrolled 18 women from an FC and 18 age, race and body mass index matched controls from the epidemiological survey Study of Periodontal Health in Almada-Seixal (SoPHiAS). In each subject, we performed a circumferential periodontal inspection to infer the periodontal status and applied a questionnaire measuring OHRQoL. FC females presented higher levels of periodontal disease, with higher periodontal epithelial surface area, periodontal probing depth and clinical attachment loss. However, periodontal diseases did not impact OHRQoL in this particular group of women seeking fertility care, suggesting unawareness about periodontal diseases. Within the limitations of this study, females referenced for fertility treatment presented worse periodontal measures than females from a representative control sample. These preliminary results may support future prospective studies to further explore the periodontal status and possible consequences in women seeking fertility care.

Man Y, Zhang C, Cheng C, Yan L, Zong M, Niu F. Hormone replacement therapy and periodontitis progression in postmenopausal women: A prospective cohort study. *J Periodontol Res.* 2024 Oct;59(5):929-938. doi: 10.1111/jre.13258. Epub 2024 Mar 24. PMID: 38523058.

ABSTRACT

Objective: This study aimed to investigate the responses of periodontal environment to hormone replacement therapy (HRT) in postmenopausal women with or without periodontitis.

Background: HRT is a common and effective strategy for controlling menopausal symptoms, while the changes of periodontal environment under it, particularly in postmenopausal women with periodontitis, remain unclear.

Methods: As a prospective cohort study, a total of 97 postmenopausal women receiving HRT were screened, including 47 with and 50 without periodontitis. Correspondingly, 97 women did not receiving HRT were screened as controls during the same period. The full-mouth sulcus bleeding index (SBI), bleeding on probing (BOP), probing pocket depth (PPD), and clinical attachment level (CAL) were measured using periodontal probes. The levels of interleukin-6 (IL-6) and tumor necrosis factor α (TNF- α) in the gingival crevicular fluid were measured using enzyme-linked immunosorbent assay. In addition, cone beam computed tomography was performed to measure the alveolar bone height (ABH) and bone mineral density (BMD).

Results: In postmenopausal women without periodontitis, no significantly changes on periodontal parameters were observed after HRT. In women with stage II periodontitis, SBI, BOP, IL-6, and TNF- α were significant decreased after one year and two years of HRT. Compared to the controls, women with stage II periodontitis who underwent HRT had significantly lower CAL and ABH and higher BMD in the second year. The incidence of at least one site with CAL increase ≥ 1 mm between baseline and 2 years was significantly lower in the HRT group than in the control group in women with stage II periodontitis. In addition, HRT was significantly associated with a decrease in SBI, BOP, IL-6, and TNF- α in the first year and with a decrease in CAL, SBI, BOP, IL-6, and ABH and an increase in BMD in the second year.

Conclusions: In postmenopausal women with stage II periodontitis, HRT is associated with the alleviation of inflammation within two years and the remission of alveolar bone loss in the second year. HRT appears to decrease the incidence of CAL increase ≥ 1 mm within 2 years in women with periodontitis by inhibiting inflammation and alveolar bone loss.

Mandò C, Abati S, Anelli GM, Favero C, Serati A, Dioni L, Zambon M, Albetti B, Bollati V, Cetin I. Epigenetic Profiling in the Saliva of Obese Pregnant Women. *Nutrients.* 2022 May 19;14(10):2122. doi: 10.3390/nu14102122. PMID: 35631263; PMCID: PMC9146705.

ABSTRACT

Maternal obesity is associated with inflammation and oxidative stress, strongly impacting the intrauterine environment with detrimental consequences for both mother and offspring. The saliva is a non-invasive biofluid reflecting both local and systemic health status. This observational study aimed to profile the epigenetic signature in the saliva of Obese (OB) and Normal-Weight (NW) pregnant women. Sixteen NW and sixteen OB



Caucasian women with singleton spontaneous pregnancies were enrolled. microRNAs were quantified by the OpenArray Platform. The promoter region methylation of Suppressor of Cytokine Signaling 3 (SOCS3) and Transforming Growth Factor Beta 1 (TGF-Beta1) was assessed by pyrosequencing. There were 754 microRNAs evaluated: 20 microRNAs resulted in being differentially expressed between OB and NW. microRNA pathway enrichment analysis showed a significant association with the TGF-Beta signaling pathway (miTALOS) and with fatty acids biosynthesis/metabolism, lysine degradation, and ECM-receptor interaction pathways (DIANA-miRPath). Both SOCS3 and TGF-Beta1 were significantly down-methylated in OB vs. NW. These results help to clarify impaired mechanisms involved in obesity and pave the way for the understanding of specific damaged pathways. The characterization of the epigenetic profile in saliva of pregnant women can represent a promising tool for the identification of obesity-related altered mechanisms and of possible biomarkers for early diagnosis and treatment of pregnancy-adverse conditions.

Marcickiewicz J, Jamka M, Walkowiak J. A Potential Link Between Oral Microbiota and Female Reproductive Health. *Microorganisms*. 2025 Mar 7;13(3):619. doi: 10.3390/microorganisms13030619. PMID: 40142512; PMCID: PMC11944636.

ABSTRACT

Oral cavity dysbiosis is associated with numerous inflammatory diseases, including diabetes, inflammatory bowel diseases, and periodontal disease. Changes in the oral microenvironment lead to bidirectional interactions between pathogens and individual host systems, which may induce systemic inflammation. There is increasing evidence linking the condition of the oral cavity with the most common causes of female infertility, such as polycystic ovary syndrome and endometriosis, as well as gestational complications, e.g., low birth weight, preterm delivery, and miscarriages. This review highlights the composition of the female oral microbiome in relation to infertility-related disorders, such as endometriosis and polycystic ovary syndrome, and provides a comprehensive overview of the current state of knowledge on the relationship between a dysbiotic oral microbiome, pregnancy, and its impact on the female reproductive tract.

Márquez-Arrico CF, Silvestre FJ, Fernández-Reyes M, Silvestre-Rangil J, Rocha M. Is there an association between periodontal disease and infertility? A systematic review. *Med Oral Patol Oral Cir Bucal*. 2024 Nov 1;29(6):e866-e875. doi: 10.4317/medoral.26831. PMID: 39396139; PMCID: PMC11584965.

ABSTRACT

Background: Today, idiopathic infertility is becoming more frequent, affecting more than 186 million people in the world. The presence of comorbidities makes patient management complex, requiring individualized infertility treatment. Periodontal diseases could contribute negatively to the management of infertility, increasing inflammation, oxidative stress and insulin resistance, and contributing negatively to the development and progression of comorbidities associated with these two entities. The aim of this systematic review is to explore whether there is an association between periodontal diseases and male and female infertility and deepen into the possible mechanisms underlying this association.

Material and Methods: The studies analyzed in this research included a total of 4871 patients (732 men and 4139 women), were original studies with high quality, mostly with a control group. Authors who have investigated idiopathic infertility suggest that infertility is associated with diseases that present low-grade

chronic inflammation, oxidative stress and insulin resistance (such as obesity, type 2 diabetes and polycystic ovary syndrome), which are in turn related to periodontal diseases.

Results: A higher prevalence of periodontal disease was found in patients with infertility compared with controls. Periodontal diseases could initially be mediated by a local and systemic proinflammatory environment, which favors a pro-oxidant state, leading to oxidative stress and, finally, irreversible destruction of the periodontal tissue. Insulin resistance, oxidative stress and inflammation are present in the pathologies associated with an increase in the prevalence and severity of periodontal diseases (such as obesity, type 2 diabetes and polycystic ovary syndrome). Therefore, IR, low-grade chronic inflammation and the oxidative stress could be the pathophysiological mechanisms linking idiopathic infertility and periodontal diseases.

Conclusions: Studies suggest an association between infertility and periodontitis. Future researches are necessary to find causality factors. Studying the patient in a global and multidisciplinary way could help in the management and treatment of idiopathic infertility.

Nannan M, Xiaoping L, Ying J. Periodontal disease in pregnancy and adverse pregnancy outcomes: Progress in related mechanisms and management strategies. *Front Med (Lausanne)*. 2022 Oct 25;9:963956. doi: 10.3389/fmed.2022.963956. PMID: 36388896; PMCID: PMC9640773.

ABSTRACT

Periodontal disease is an inflammatory and destructive disease of tissues supporting the tooth. A large number of studies have confirmed that periodontal pathogens and their metabolites can lead to adverse pregnancy outcomes in direct or indirect ways. Adverse pregnancy outcomes, such as preterm birth, low birth weight, and pre-eclampsia, have a serious impact on human reproductive health. In recent years, although the level of global medical technology has gradually improved, the incidence of adverse pregnancy outcomes has not declined and is still a global public health problem. The purpose of this review is to summarize the current data on periodontal disease in pregnancy and adverse pregnancy outcomes, including the association between periodontal disease and adverse pregnancy outcomes, the pathogenic mechanism related to this association, the efficacy of different nutrition supplements for both periodontal disease and adverse pregnancy outcomes and the effect of providing periodontal treatment on the occurrence of adverse pregnancy outcomes, to provide guidance for the prevention and treatment of adverse pregnancy outcomes in clinical practice.

Piirainen V, König E, Husso A, Heinonen M, Iivanainen A, Pessa-Morikawa T, Niku M. Bacterial profiles of the oral, vaginal, and rectal mucosa and colostrum of periparturient sows. *PLoS One*. 2025 Feb 12;20(2):e0317513. doi: 10.1371/journal.pone.0317513. PMID: 39937738; PMCID: PMC11819496.

ABSTRACT

The commensal microbiota influences the health, feeding efficiency, and reproductive performance of sows. The microbiota composition in the alimentary and genitourinary tracts and in colostrum/milk during pregnancy and lactation also impacts the microbiota and immune system, growth, and health of the piglets. Knowledge of the microbial compositions is important for evaluation of these effects and for discovering



ways to improve the health and productivity of the sows. Oral, vaginal, and rectal mucosa and colostrum were sampled from 32 sows of variable parity in late pregnancy, and colostrum within 6 hours of delivery of the first piglet, on four commercial piglet-producing farms in Finland. Microbial compositions were analyzed by 16S rRNA gene amplicon sequencing. The most abundant genera of the oral microbiota were Rothia, Moraxella, and Streptococcus. The rectal microbiota was dominated by Clostridium sensu stricto 1. Streptococcus was the most abundant genus in the vagina and colostrum. Moderate differences in diversity and composition were observed between farms. The relative abundances of the genera Neisseria (MaAsLin 2 $q = 0.002$, ANCOMBC $q = 0.005$), Fusobacterium (MaAsLin 2 $q = 0.008$, ANCOMBC $q = 0.04$) and Bacteroides (MaAsLin 2 $q < 0.005$, ANCOMBC $q = 0.06$) were lower in oral samples and Romboutsia (MaAsLin 2 $q = 0.07$, ANCOMBC $q = 0.05$), Turicibacter (MaAsLin 2 $q = 0.08$, ANCOMBC $q = 0.02$) and Lachnospiraceae_UCG_007 (MaAsLin 2 $q = 0.1$, ANCOMBC $q = 0.05$) were higher in rectal samples of multiparous compared to primiparous sows. In vaginal samples there was a tendency of higher relative abundances of the genera Fusobacterium and Streptococcus in multiparous than primiparous sows. Among the differentially abundant taxa, F. necrophorum and F. nucleatum were identified in oral samples, F. gastrois and F. necrophorum in vaginal samples, and S. dysgalactiae in colostrum samples. This study provides a comprehensive overview of the mucosal and colostrum microbiota of periparturient sows during normal production conditions on Finnish commercial farms.

Prodan-Barbulescu C, Bratosin F, Folescu R, Boeriu E, Popa ZL, Citu C, Ratiu A, Rosca O, Ilie AC. Analysis of Vaginal Microbiota Variations in the Third Trimester of Pregnancy and Their Correlation with Preterm Birth: A Case-Control Study. *Microorganisms*. 2024 Feb 19;12(2):417. doi: 10.3390/microorganisms12020417. PMID: 38399821; PMCID: PMC10892439.

ABSTRACT

This study conducted a detailed analysis of the vaginal microbiota in pregnant women to explore its correlation with preterm birth (PTB) outcomes. The primary objective was to identify microbial variations associated with increased PTB risk. Secondary objectives included investigating how changes in microbial composition relate to the local immune environment and PTB. Utilizing a retrospective case-control design, the study involved pregnant women with liveborn infants between 2019 and 2023. In total, 89 women who delivered preterm and 106 term deliveries were included. Data collection focused on third-trimester vaginal cultures. Statistically significant differences were observed between the preterm and full-term groups in several areas. The median white blood cell count ($10.2 \times 10^3/\text{mm}^3$ vs. $7.6 \times 10^3/\text{mm}^3$, $p = 0.009$) and neutrophil count ($7.2 \times 10^3/\text{mm}^3$ vs. $5.1 \times 10^3/\text{mm}^3$, $p < 0.001$) were higher in the preterm group. Vaginal pH was also elevated in preterm births (5.6 vs. 4.4, $p < 0.001$), with a higher prevalence of bacterial vaginosis (29.2% vs. 12.3%, $p = 0.001$) as indicated by the Nugent Score. The study noted a significant association of PTB with the presence of Candida spp. (OR = 1.84, $p = 0.018$), Gardnerella vaginalis (OR = 2.29, $p = 0.003$), Mycoplasma hominis (OR = 1.97, $p = 0.007$), and Ureaplasma urealyticum (OR = 2.43, $p = 0.001$). Conversely, a reduction in Lactobacillus spp. correlated with a decreased PTB risk (OR = 0.46, $p = 0.001$). The study provides compelling evidence that specific vaginal microbiota components, particularly certain pathogenic bacteria and an altered Lactobacillus profile, are significantly associated with PTB risk. These findings highlight the potential of targeting microbial factors in strategies aimed at reducing PTB rates. Further research is necessary to fully understand the complex interplay between microbial dynamics, host immunity, and PTB outcomes.

Ramírez V, Weber L, Hernández M, Realini O, Bendek MJ, Busso D, Hoare A, Illanes SE, Chaparro A. Obesity is related to maternal periodontitis severity in pregnancy: a cross-sectional study. *Clin Oral Investig*. 2023 Sep;27(9):5509-5518. doi: 10.1007/s00784-023-05170-4. Epub 2023 Jul 28. PMID: 37505241.

ABSTRACT

Objectives: To evaluate the relationship between obesity and periodontitis staging compared with periodontal healthy or gingivitis in pregnant women.

Materials and Methods: An analytical cross-sectional study was conducted on pregnant women between 11 and 14 weeks of pregnancy. Sociodemographic, clinical, obstetric, and periodontal variables were studied. The exposure variable was obesity (body mass index [BMI] ≥ 30), and the primary outcome was periodontitis staging versus periodontal healthy/gingivitis. Data were analysed and estimated by multinomial logistic regression models.

Results: The present study screened 1086 pregnancies and analysed 972 women with a median age of 29 years; 36.8% were diagnosed as obese. 26.9% of patients were diagnosed as periodontal healthy or gingivitis, 5.5% with stage I periodontitis, 38.6% with stage II periodontitis, 24% with stage III periodontitis, and 5.1% with stage IV periodontitis. After identifying and adjusting for confounding variables (educational level and plaque index), obesity had a 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, respectively.

Conclusion: Besides the already known risk indicators for periodontitis (age, smoking, and educational level), our study suggests a relationship between obesity and periodontitis staging in pregnancy.

Clinical relevance: Obesity can alter host immune responses, leading to increased susceptibility to infections and overactive host immunity, which could influence the prevalence and severity of maternal periodontitis in pregnancy.

Rani Balaji VC, Saraswathi K, Manikandan S. Periodontal health in first trimester of pregnancy and birth weight outcomes. *Indian J Dent Res*. 2021 Apr-Jun;32(2):181-186. doi: 10.4103/ijdr.ijdr_94_21. PMID: 34810386.

ABSTRACT

Introduction: The oral microbiome is influenced by numerous immediate environmental factors including pH, anaerobic conditions, nutrition, and hormone levels. During pregnancy, due to the associated hormonal changes, periodontal tissues show an enhanced inflammatory response to plaque microbiome. This is mediated by female sex hormones that are drastically altered in pregnancy. This study was undertaken to estimate the association of birth weight and the influence of the oral periodontal health in pregnant women in Chennai, South India and correlate the same with education and body mass index (BMI).



Methods: This was a controlled, minimal interventional, prospective, observational study to identify the relationship of gingival health in the first trimester of pregnancy and on birth weight. Potential participants were referred by health-care providers. Pregnant women (≥ 18 years and ≤ 25 years) in the first trimester were enrolled for this study.

Results: : Of the 165 pregnant women, 121 pregnant women formed the study group.

Conclusion: It was found that low birth weight could be a consequence of several modifiable and non-modifiable factors. This study shows the association of oral health of the mother in the first trimester with low birth weight. The findings of this study need to be confirmed with a large-scale, multi-centric study accounting for all known confounders. Till such a study is performed, the need for optimal oral health of an expectant mother cannot be discounted and there is no absolute harm in having good oral hygiene.

Rathi N, Reche A. Risk of Periodontal Diseases in Women With Polycystic Ovary Syndrome: An Overview. *Cureus*. 2023 Oct 17;15(10):e47169. doi: 10.7759/cureus.47169. PMID: 38021744; PMCID: PMC10652058.

ABSTRACT

Polycystic ovary syndrome (PCOS) is the most prevalent condition seen in reproductive-aged women, which has a negative impact on their health system. There is a serious concern for women having PCOS that they may experience long-term metabolic conditions. PCOS also has a negative impact on periodontium components such as gingiva, periodontal ligament (PDL), and alveolar bone. It has been said that there may be a bidirectional link between PCOS and periodontal diseases. Moreover, PCOS and periodontal disorders both have common risk factors. Periodontal diseases are exacerbated by systemic low-grade inflammation, including obesity, constant immunological imbalance, and oxidative stress caused by PCOS. On the other hand, periodontal diseases can also increase the risk of causing PCOS. According to recent data, women with PCOS may be more likely to suffer from periodontal diseases. A PubMed and Google Scholar search was conducted for literature relating to PCOS and its relationship with different comorbidities which also included periodontal disorders. Analyses were performed, and data was synthesized and assembled in a presentable form. Therefore, the focus of this review will be on the relationship between PCOS and periodontal disorders, as well as the risk factors for both. However, in order to establish a more distinct and solid link, more studies with a large sample size need to be done.

Romero R, Theis KR, Gomez-Lopez N, Winters AD, Panzer JJ, Lin H, Galaz J, Greenberg JM, Shaffer Z, Kracht DJ, Chaiworapongsa T, Jung E, Gotsch F, Ravel J, Peddada SD, Tarca AL. The Vaginal Microbiota of Pregnant Women Varies with Gestational Age, Maternal Age, and Parity. *Microbiol Spectr*. 2023 Aug 17;11(4):e0342922. doi: 10.1128/spectrum.03429-22. Epub 2023 Jul 24. PMID: 37486223; PMCID: PMC10434204.

ABSTRACT

The composition of the vaginal microbiota is heavily influenced by pregnancy and may factor into pregnancy complications, including spontaneous preterm birth. However, results among studies have been inconsistent due, in part, to variation in sample sizes and ethnicity. Thus, an association between the vaginal microbiota and preterm labor continues to be debated. Yet, before assessing associations between

the composition of the vaginal microbiota and preterm labor, a robust and in-depth characterization of the vaginal microbiota throughout pregnancy in the specific study population under investigation is required. Here, we report a large longitudinal study (n = 474 women, 1,862 vaginal samples) of a predominantly African-American cohort—a population that experiences a relatively high rate of pregnancy complications—evaluating associations between individual identity, gestational age, and other maternal characteristics with the composition of the vaginal microbiota throughout gestation resulting in term delivery. The principal factors influencing the composition of the vaginal microbiota in pregnancy are individual identity and gestational age at sampling. Other factors are maternal age, parity, obesity, and self-reported Cannabis use. The general pattern across gestation is for the vaginal microbiota to remain or transition to a state of *Lactobacillus* dominance. This pattern can be modified by maternal parity and obesity. Regardless, network analyses reveal dynamic associations among specific bacterial taxa within the vaginal ecosystem, which shift throughout the course of pregnancy. This study provides a robust foundational understanding of the vaginal microbiota in pregnancy and sets the stage for further investigation of this microbiota in obstetrical disease. **IMPORTANCE** There is debate regarding links between the vaginal microbiota and pregnancy complications, especially spontaneous preterm birth. Inconsistencies in results among studies are likely due to differences in sample sizes and cohort ethnicity. Ethnicity is a complicating factor because, although all bacterial taxa commonly inhabiting the vagina are present among all ethnicities, the frequencies of these taxa vary among ethnicities. Therefore, an in-depth characterization of the vaginal microbiota throughout pregnancy in the specific study population under investigation is required prior to evaluating associations between the vaginal microbiota and obstetrical disease. This initial investigation is a large longitudinal study of the vaginal microbiota throughout gestation resulting in a term delivery in a predominantly African-American cohort, a population that experiences disproportionately negative maternal-fetal health outcomes. It establishes the magnitude of associations between maternal characteristics, such as age, parity, body mass index, and self-reported Cannabis use, on the vaginal microbiota in pregnancy.

Saadaoui M, Singh P, Al Khodor S. Oral microbiome and pregnancy: A bidirectional relationship. *J Reprod Immunol*. 2021 Jun;145:103293. doi: 10.1016/j.jri.2021.103293. Epub 2021 Feb 19. PMID: 33676065.

ABSTRACT

The oral cavity contains the second most complex microbial population within the human body, with more than 700 bacterial organisms. Recent advances in Next Generation Sequencing technology have unraveled the complexities of the oral microbiome and provided valuable insights into its role in health and disease. The human oral microbiome varies dramatically during the different stages of life, including pregnancy. The total viable microbial counts in pregnant women are known to be higher compared to non-pregnant women, especially in the first trimester of pregnancy. A balanced oral microbiome is vital for a healthy pregnancy, as perturbations in the oral microbiome composition can contribute to pregnancy complications. On the other hand, physiological changes and differences in hormonal levels during pregnancy, increase susceptibility to various oral diseases such as gingivitis and periodontitis. A growing body of evidence supports the link between the composition of the oral microbiome and adverse pregnancy outcomes such as preterm birth, preeclampsia, low birth weight among others. This review aims to summarize the dynamics of oral microbiome during pregnancy and to discuss the relationship between a dysbiotic oral microbiome and pregnancy complications.



Sachelarie L, Iman AEH, Romina MV, Huniadi A, Hurjui LL. Impact of Hormones and Lifestyle on Oral Health During Pregnancy: A Prospective Observational Regression-Based Study. *Medicina (Kaunas)*. 2024 Oct 30;60(11):1773. doi: 10.3390/medicina60111773. PMID: 39596958; PMCID: PMC11596282.

ABSTRACT

Background and Objectives: This study explores the impact of hormonal fluctuations during pregnancy and lifestyle factors on stomatognathic system (SS) health. The aim is to determine how pregnancy-related hormonal changes and oral hygiene behaviors affect the onset of stomatognathic issues, such as gingival inflammation (GI) and dental erosion (DE).

Materials and Methods: A prospective, observational study was conducted with 100 pregnant women, divided into two groups: Group A (60 women with significant stomatognathic alterations) and Group B (40 women without such alterations). Multiple regression analysis was used to evaluate the influence of hormonal levels, oral hygiene habits, and vomiting episodes on stomatognathic health.

Results: Age and socioeconomic status showed no significant association with stomatognathic health ($p > 0.05$). In contrast, elevated levels of estrogen ($p = 0.001$) and progesterone ($p = 0.003$) were significantly linked to the severity of stomatognathic changes. Oral hygiene habits also had a statistically significant impact ($p = 0.02$), while vomiting frequency was not an important factor ($p > 0.05$).

Conclusions: Hormonal changes during pregnancy, particularly increased estrogen and progesterone levels, are key predictors of stomatognathic health. These findings suggest that while oral hygiene is important, hormonal fluctuations play a dominant role in influencing stomatognathic system (SS) health during pregnancy.

Sayed G, Varghese SS. Evaluation of the Effect of Supragingival Scaling on Periodontal Parameters in Pregnant Women with Metabolic Syndrome. *J Pharm Bioallied Sci*. 2024 Dec;16(Suppl 4):S3925-S3931. doi: 10.4103/jpbs.jpbs_1372_24. Epub 2024 Dec 10. PMID: 39927038; PMCID: PMC11805228.

ABSTRACT

Background: Although there are quite a number of studies on the impacts of periodontal therapeutic management on pregnant females, literature on the impact of supragingival scaling on pregnant females with metabolic syndrome (MS) is wanting. The present investigation was meticulously formulated to ascertain the clinical ramifications of supragingival scaling in pregnant individuals diagnosed with MS.

Material and Methods: An intervention study was conducted on 47 pregnant females. The gingival index (GI), plaque index, bleeding on probing, probing depth, and clinical attachment level were among the periodontal parameters evaluated. By the end of 20-21 weeks of pregnancy, all participants had received scaling and polishing at the baseline appointment, along with advice on dental hygiene. Periodontal parameters were gathered again during a follow-up appointment 8 weeks post treatment. A 5% threshold for statistical significance was set, and paired t-test and chi-square test were applied for comparison.

Results: Lower levels of PI, GI, and BOP 8 weeks post supragingival scaling were noted than at the baseline. The results obtained were statistically significant ($P < 0.001$) All patients with severe periodontitis ($n = 14$) before supragingival scaling shifted to milder forms of the disease. Similarly, moderate periodontitis was seen in 20 patients before the start of the study, and after the intervention, it was reduced to 16 patients.

Conclusion: In summary, supragingival scaling lowers the incidence of periodontal disease in pregnant MS females. High-risk pregnant women who receive scaling treatment and instruction on oral hygiene on a regular basis have better oral health, which in turn improves the health of their unborn child.

Sharma S, Bartaula M, Risal S, Devkota N. Association Between Maternal Periodontitis and Adverse Pregnancy Outcomes: A Cross-Sectional Study at a Maternity Hospital in Kathmandu, Nepal. *Cureus*. 2024 Dec 28;16(12):e76544. doi: 10.7759/cureus.76544. PMID: 39881938; PMCID: PMC11775741.

ABSTRACT

Background: Adverse pregnancy outcomes, including preterm birth and low birth weight, are major global health challenges, leading to millions of newborn deaths each year. Since 1996, periodontitis and related gum diseases have been proposed as potential contributing factors, but research findings remain mixed. Further research is needed to clarify this link.

Objective: This study aims to assess the status of periodontitis and its association with adverse pregnancy outcomes.

Methodology: A cross-sectional study was conducted among 145 third-trimester mothers attending antenatal care (ANC) checkups at Maternity Hospital in Kathmandu. Data were gathered from medical records, interviews, and oral health screenings using the Community Periodontal Index (CPI) for periodontitis. Birth outcomes were assessed after delivery through medical records, which are considered highly reliable, with established protocols for data entry, consistent documentation, and regular quality control measures ensuring accuracy and consistency across healthcare providers. Ethical approval was obtained from the Nepal Health Research Council (NHRC) (approval no. 423) on September 19, 2023.

Results: Periodontitis was observed in 53 (36.6%) participants, with a higher prevalence in individuals aged 30 or more (10, 43.5%) and those who were illiterate (4, 50%). Health conditions such as hypertension, diabetes, and urinary tract infections were associated with higher periodontitis rates. However, no significant associations were found between age, education, obstetric history, or health conditions and adverse pregnancy outcomes. Periodontitis showed a significant association with adverse outcomes, with 56.6% of those with periodontitis experiencing adverse outcomes, compared to 32.6% without periodontitis ($P = 0.005$). The odds ratio of 2.69 indicates individuals with periodontitis are 2.69 times more likely to experience adverse outcomes.

Conclusions: Maternal periodontitis is significantly associated with adverse pregnancy outcomes, with individuals having periodontitis being 2.69 times more likely to experience such outcomes. These findings highlight the importance of incorporating periodontal care into prenatal healthcare.



Shrivastava S. Menopause and Oral Health: Clinical Implications and Preventive Strategies. *J Midlife Health*. 2024 Jul-Sep;15(3):135-141. doi: 10.4103/jmh.jmh_125_24. Epub 2024 Oct 17. PMID: 39610962; PMCID: PMC11601932.

ABSTRACT

Menopause, occurring typically between the ages of 45 and 55 years, marks the end of a woman's reproductive years and is characterized by the cessation of menstruation and a significant decline in estrogen and progesterone production. These hormonal changes impact various aspects of health, including oral health. This review explores the clinical implications of menopause on oral health and outlines preventive strategies. Hormonal changes during menopause can lead to xerostomia (dry mouth), periodontal disease, burning mouth syndrome (BMS), oral mucosal changes, altered taste sensation, and osteoporosis-related oral health issues. Xerostomia results from decreased salivary flow, increasing the risk of dental caries and oral infections. Periodontal disease is exacerbated by estrogen deficiency, leading to bone loss and increased tooth mobility. BMS, characterized by a chronic burning sensation, and oral mucosal atrophy are linked to hormonal fluctuations. In addition, altered taste perception and osteoporosis further complicate oral health management. Effective prevention and management strategies include regular dental checkups, good oral hygiene practices, and tailored treatments such as fluoride treatments, saliva substitutes, and hormone replacement therapy. Nonpharmacological approaches such as stress management and lifestyle modifications also play a role. This review emphasizes the importance of a multidisciplinary approach, involving dental and medical professionals, to address the complex oral health challenges faced by menopausal women. Understanding the underlying mechanisms and implementing evidence-based preventive measures can significantly enhance the oral health and overall well-being of menopausal women.

Tang L, Chen K. Association Between Periodontitis and Adverse Pregnancy Outcomes: Two-Sample Mendelian Randomisation Study. *Int Dent J*. 2024 Dec;74(6):1397-1404. doi: 10.1016/j.identj.2024.05.001. Epub 2024 May 25. PMID: 38797633; PMCID: PMC11551559.

ABSTRACT

Aim: This Mendelian randomisation (MR) study endeavoured to delineate the causal relationship between periodontitis and adverse pregnancy outcomes (APOs), encompassing low birthweight (LBW), pre-term birth (PTB), stillbirth, miscarriage, and gestational hypertension (GH).

Methods: Utilising genetic instruments for periodontitis (acute and chronic periodontitis) from the Genome-Wide Association Study (GWAS) database among individuals of European descent, this study explored the causal relationship with adverse pregnancy outcomes, and vice versa. The Inverse Variance Weighted (IVW) method was employed as the primary analytical approach to assess causality, with MR-Egger serving as a sensitivity analysis method.

Results: The primary analytical method employed in this study, IVW, did not reveal any impact of periodontitis (acute and chronic periodontitis) on PTB, stillbirth, miscarriage, and gestational hypertension, and vice versa. Heterogeneity testing using the MR-Egger method confirmed the null causal hypothesis, with odds ratios (OR) approximating 1, and P-values exceeding 0.05. Notably, the results from the IVW analysis (OR 1.410, CI 1.039-1.915, P-value 0.028) indicate statistically significant evidence supporting a causal re-

lationship between chronic periodontitis and LBW. However, caution is advised in interpreting the causal relationship, considering the non-significant P-values obtained from other methods.

Conclusion: Within the limitations of this MR study, the findings do not support the influence of periodontitis on LBW, PTB, stillbirth, miscarriage, and GH, nor vice versa.

Teles F, Collman RG, Mominkhan D, Wang Y. Viruses, periodontitis, and comorbidities. *Periodontol 2000*. 2022 Jun;89(1):190-206. doi: 10.1111/prd.12435. Epub 2022 Mar 4. PMID: 35244970.

ABSTRACT

Seminal studies published in the 1990s and 2000s explored connections between periodontal diseases and systemic conditions, revealing potential contributions of periodontal diseases in the initiation or worsening of systemic conditions. The resulting field of periodontal medicine led to the publication of studies indicating that periodontal diseases can influence the risk of systemic conditions, including adverse pregnancy outcomes, cardiovascular and respiratory diseases, as well as Alzheimer disease and cancers. In general, these studies hypothesized that the periodontal bacterial insult and/or the associated proinflammatory cascade could contribute to the pathogenesis of these systemic diseases. While investigations of the biological basis of the connections between periodontal diseases and systemic conditions generally emphasized the bacteriome, it is also biologically plausible, under an analogous hypothesis, that other types of organisms may have a similar role. Human viruses would be logical "suspects" in this role, given their ubiquity in the oral cavity, association with periodontal diseases, and ability to elicit strong inflammatory response, compromise immune responses, and synergize with bacteria in favor of a more pathogenic microbial consortium. In this review, the current knowledge of the role of viruses in connecting periodontal diseases and systemic conditions is examined. We will also delve into the mechanistic basis for such connections and highlight the importance of those relationships in the management and treatment of patients.

Tenenbaum A, Azogui-Levy S. Oral Health Knowledge, Attitudes, Practices, and Literacy of Pregnant Women: A Scoping Review. *Oral Health Prev Dent*. 2023 May 17;21:185-198. doi: 10.3290/j.ohpd.b4100965. PMID: 37195335; PMCID: PMC11619840.

ABSTRACT

Purpose: Pregnancy is a state particularly sensitive to oral pathologies (periodontal and decay). The oral health status of pregnant women can have an impact on the outcome of the pregnancy and the oral health of the child to come. As in the general population, the oral health of pregnant women is socially determined and dependent on psychosocial factors, including factors related to health behaviours. Research into the determinants of oral health in pregnant women will allow a better understanding of the mechanisms of action specific to this period of perinatality.

Materials and Methods: The methodology of a scoping review was selected with the objective of investigating the contribution of knowledge, attitudes, practices (KAP) and oral health literacy on pregnant women's oral health.



Results: Of the 67 articles selected, 52 studied the 'knowledge' component, 27 the 'attitude' (including the perception and beliefs concerning health), and 54 the 'practice' component, while 6 articles examined literacy. The KAP components were studied in relation to socioeconomic determinants, oral health status, healthcare utilisation and oral health literacy. The level of oral health literacy of pregnant women is strongly related to their living environment and socioprofessional level which influences their attitudes and practices. Woman's oral health practices before pregnancy can be a predictor of her practices during pregnancy.

Conclusion: The complex nature of the attitude component (locus of control, sense of self-efficacy, perceived importance) is little discussed. The heterogeneity and exhaustiveness of topics related to KAP raises the question of how to more accurately assess KAP in pregnant women in a valid, reproducible, and transferable manner and the need to build a structured oral health consensus body of work. This review is a first step towards identifying the psychosocial factors that are essential for developing a model of educational intervention in oral health that combines the process of behavioural change and decision making while taking into account the concept of empowerment, and with the aim of reducing social inequalities in health.

Tsikouras P, Oikonomou E, Nikolettos K, Andreou S, Kyriakou D, Damaskos C, Garmpis N, Monastiridou V, Nalmpanti T, Bothou A, Iatrakis G, Nikolettos N. The Impact of Periodontal Disease on Preterm Birth and Preeclampsia. *J Pers Med.* 2024 Mar 26;14(4):345. doi: 10.3390/jpm14040345. PMID: 38672972; PMCID: PMC11051368.

ABSTRACT

This review delves into the possible connection between periodontitis and negative pregnancy outcomes, such as preeclampsia and preterm birth. It highlights the potential influence of an unidentified microbial factor on preeclampsia and the effects of inflammatory responses on the rate of preterm births. Furthermore, it underscores the prevalent occurrence of oral ailments within the populace and their significant repercussions on quality of life. Hormonal fluctuations during pregnancy may exacerbate oral conditions such as pregnancy gingivitis and periodontitis, necessitating bespoke therapeutic approaches that take into account potential fetal ramifications. Periodontal disease, characterized by microbial attack and inflammatory response, results in tissue destruction and tooth loss. The oral cavity's susceptibility to bacterial colonization, which is primarily due to its role as a site for food intake, is highlighted. Furthermore, research indicates a correlation between inflammatory responses and factors such as prostaglandin E2 and IL-1 β , and preterm birth. Therapeutic interventions are a focus of international research, with efforts being aimed at optimizing outcomes through larger studies involving pregnant women.

Wu J, Wu J, Tang B, Zhang Z, Wei F, Yu D, Li L, Zhao Y, Wang B, Wu W, Hong X. Effects of different periodontal interventions on the risk of adverse pregnancy outcomes in pregnant women: a systematic review and network meta-analysis of randomized controlled trials. *Front Public Health.* 2024 Sep 20;12:1373691. doi: 10.3389/fpubh.2024.1373691. PMID: 39371200; PMCID: PMC11449777.

ABSTRACT

Background: Periodontal disease is widespread among pregnant women, and it is possible that taking action to improve oral health conditions can make improvements in adverse pregnancy outcomes. Herein, we summarize the recent evidence using a network meta-analysis to assess the effects of different periodontal treatment intervention strategies on the risk of adverse pregnancy outcomes in pregnant women.

Materials and Methods: Randomized controlled trials were retrieved from PubMed, Web of Science, Embase, and Cochrane Library databases. After literature screening, data extraction, and quality evaluation of the included literature were performed, the R studio 4.2.2 "netmeta" package was used for the network meta-analysis.

Results: A total of 20 studies were included, and 5 adverse pregnancy outcomes (preterm birth, low birth weight, preterm birth and/or low birth weight infants, small for gestational age, and pre-eclampsia) were considered to examine the effects of different periodontal treatment interventions strategies on the risk of the abovementioned outcome indicators. The results of the network meta-analysis demonstrated that the three periodontal treatment intervention strategies of sub- and/or supra-gingival scaling and root planing + chlorhexidine rinsing (SRP + CR), sub- and/or supra-gingival scaling and root planing + tooth polishing and plaque control (SRP + CR + TP), and sub- and/or supra-gingival scaling and root planing + sonic toothbrush + tooth polishing and plaque control (SRP + ST + TP) reduced the risk of preterm birth [odds ratio (OR) = 0.29, 95% confidence interval (CI) (0.10-0.88), OR = 0.25, 95CI% (0.10-0.63), OR = 0.28, 95CI% (0.11-0.69), respectively]. In addition, two periodontal treatment intervention strategies, SRP + CR and SRP + CR + TP, were effective methods in terms of the risk of preterm birth and/or low birth weight [OR = 0.18, 95CI% (0.06-0.52), OR = 0.31, 95CI% (0.12-0.79)].

Conclusion: The available evidence suggests that the risk of preterm birth and preterm birth and/or low birth weight can be reduced with certain periodontal treatment intervention strategies. Future studies should focus on optimizing intervention strategies and the optimal timing for different periods of pregnancy, in order to provide a reference for pregnant women's healthcare.



Xu H, Cai M, Xu H, Shen XJ, Liu J. Role of periodontal treatment in pregnancy gingivitis and adverse outcomes: a systematic review and meta-analysis. *J Matern Fetal Neonatal Med.* 2025 Dec;38(1):2416595. doi: 10.1080/14767058.2024.2416595. Epub 2024 Dec 25. PMID: 39721768.

ABSTRACT

Background: Pregnancy gingivitis is a common oral health issue that affects both maternal and fetal health. This study aims to evaluate the effectiveness of periodontal treatment in preventing pregnancy gingivitis, preterm birth, and low birth weight through a systematic review and meta-analysis of randomized controlled trials (RCTs).

Methods: A systematic review and meta-analysis were conducted following PRISMA guidelines. A comprehensive literature search was performed across CINAHL, Scopus, Cochrane, and PubMed/Medline databases from 2000 to the present. Study selection and data extraction were independently carried out by two reviewers. Statistical analyses, including heterogeneity tests, sensitivity analysis, and publication bias assessment, were conducted using RevMan 5.4 and R software.

Results: A total of 13 studies were included. The meta-analysis indicated that periodontal treatment might have a potential effect on preventing pregnancy gingivitis, but this was not statistically significant (OR = 0.85, 95% CI [0.68, 1.06], I² = 51%). Subgroup analysis revealed that periodontal treatment significantly reduced the rates of preterm birth and low birth weight in lower-quality studies, but no significant effects were observed in higher-quality studies. Sensitivity analysis and publication bias tests confirmed the stability and reliability of the results.

Conclusion: While lower-quality studies suggest that periodontal treatment may positively impact pregnancy gingivitis, preterm birth, and low birth weight, these effects were not supported by higher-quality evidence. Further well-designed RCTs are needed to confirm these findings and ensure their reliability. Periodontal treatment could potentially be considered as part of prenatal care to improve maternal oral health and pregnancy outcomes.

Ye C, Kapila Y. Oral microbiome shifts during pregnancy and adverse pregnancy outcomes: Hormonal and Immunologic changes at play. *Periodontol* 2000. 2021 Oct;87(1):276-281. doi: 10.1111/prd.12386. PMID: 34463984; PMCID: PMC8457099.

ABSTRACT

Because of hormonal and immunologic changes, there are significant changes in the oral microbiome that emerge during pregnancy. Recent evidence further suggests that there is an association between the presence of periodontal disease and a pregnancy-associated oral dysbiosis. Although this oral dysbiosis and pathogenic periodontal bacteria are considered to be associated with adverse pregnancy outcomes, it is still not clear how an oral dysbiosis during pregnancy can modulate oral diseases and birth outcomes. To develop preventive or therapeutic interventions, it is critical to understand the oral microbiome changes that emerge during pregnancy and their association with adverse pregnancy outcomes. In the present review, we summarize the current literature on normal changes in the oral microbiome that occur during pregnancy; the

pathogenic changes in the oral microbiome believed to occur in association with adverse pregnancy outcomes; and the association between the placental microbiome and the oral microbiome.

Zakaria ZZ, Al-Rumaihi S, Al-Absi RS, Farah H, Elamin M, Nader R, Bouabidi S, Suleiman SE, Nasr S, Al-Asmakh M. Physiological Changes and Interactions Between Microbiome and the Host During Pregnancy. *Front Cell Infect Microbiol.* 2022 Feb 21;12:824925. doi: 10.3389/fcimb.2022.824925. PMID: 35265534; PMCID: PMC8899668.

ABSTRACT

In recent years, it has become clear that microbiome play a variety of essential roles in human metabolism, immunity, and overall health and that the composition of these microbiome is influenced by our environment, diet, weight, hormones, and other factors. Indeed, numerous physiological and pathological conditions, including obesity and metabolic syndrome, are associated with changes in our microbiome, referred to as dysbiosis. As a result, it is not surprising that such changes occur during pregnancy, which includes substantial weight gain and significant changes in metabolism and immune defenses. The present review relates physiological changes during pregnancy to alterations in the microbial composition at various sites, including the gut, oral cavity, and vagina. Pregnancy has been linked to such microbial changes, and we believe that, in contrast to certain disease states, these microbial changes are vital for a healthy pregnancy, probably through their influence on the mother's immunological, endocrinological, and metabolic status.

Zeffa AC, Sestario CS, Ramos SP, Andrello AC, Simão ANC, Salles MJS. Effects of periodontal disease on the reproductive performance and offspring of Wistar rats. *J Periodontol.* 2025 May;96(5):455-466. doi: 10.1002/JPER.24-0281. Epub 2024 Dec 18. PMID: 39692465.

ABSTRACT

Background: Periodontitis can induce systemic inflammation, and it may affect the testicles and male reproductive performance. This study investigated the effects of periodontitis on the testicles, reproductive performance, and offspring development in male rats.

Methods: Male Wistar rats were induced with periodontitis by ligating their first molars. After 14 days of inducing periodontal lesions, the animals were observed for an additional 54 days, corresponding to a complete cycle of spermatogenesis. Rats from the periodontitis group (GP, n = 12) and the control group (GC, n = 12) were paired with healthy females (n = 48) for 10 days, equivalent to 2 estrous cycles. Post-mating, the males underwent microtomographic, histological, and reproductive parameter assessments.

Results: Microtomographic analysis revealed higher porosity around the first molar in GP (26 ± 6%) and greater distance between the amelocemental junction and the alveolar bone (1.37 [1.12-1.90] mm), indicative of bone resorption. GP also exhibited significant decreases in final body weight, reduced Sertoli and Leydig cell counts, and lowered testosterone levels compared to GC. Significant morphological alterations in sperm tails were observed in GP compared to GC.



Conclusions: Periodontitis adversely affected reproductive performance, evoking, and offspring development in male rats. These findings highlight the systemic impacts of periodontal disease on male reproductive health in an animal model.

Plain language summary: Our study investigated how periodontitis can affect male reproductive health in rats and offspring development. We induced periodontitis in male rats and, after a full cycle of sperm production, these rats were mated with healthy females. We observed that the rats with periodontitis had worse reproductive performance compared to the control group without periodontitis. Additionally, the offspring of the rats with periodontitis showed signs of compromised intrauterine development and a higher incidence of congenital malformations. These results highlight that the inflammation caused by periodontitis can have adverse effects beyond the mouth, significantly impacting male reproductive health and offspring development. These findings suggest the need for further research into the clinical implications of periodontitis on reproductive health.

Zhang KK, Sun Y, Pan YH. [Developments in Research on the Relationship Between Porphyromonas gingivalis and Non-Oral Diseases]. Sichuan Da Xue Xue Bao Yi Xue Ban. 2023 Jan;54(1):20-26. Chinese. doi: 10.12182/20230160509. PMID: 36647638; PMCID: PMC10409047.

ABSTRACT

Porphyromonas gingivalis (P. gingivalis) is a common periodontal pathogen. Recently, there has been increasing evidence suggesting that P. gingivalis is not only a common pathogen in the oral cavity, but is also closely associated with non-oral diseases, including inflammatory bowel disease, cancer, cardiovascular diseases, Alzheimer's disease, rheumatoid arthritis, diabetes mellitus, premature birth and non-alcoholic hepatitis, etc. Herein, we reviewed the developments in recent years in research on the relationship between P. gingivalis, a periodontal pathogen, and non-oral diseases, which will help determine whether P. gingivalis could be used as an auxiliary diagnostic biomarker or a potential therapeutic target for these non-oral diseases, thus contributing to the development of treatment strategies for the relevant diseases.

Zhang F, Cheng R, Yang X, Lian X, Wen P. Pain Relief Effects and Safety of Transitional Therapy in the Treatment of Posterior Teeth of Pregnant Women with Symptomatic Irreversible Pulpitis and Symptomatic Apical Periodontitis. Int J Womens Health. 2022 Dec 30;14:1897-1904. doi: 10.2147/IJWH.S378358. PMID: 36605256; PMCID: PMC9809172.

ABSTRACT

Purpose: To assess the pain relief effects and safety of transitional therapy (TT) in the treatment of posterior teeth of pregnant women with symptomatic irreversible pulpitis and symptomatic apical periodontitis.

Methods: A prospective cohort clinical study was conducted in the Department of Stomatology at Shenzhen Maternity & Child Healthcare Hospital, China, from January 2017 to December 2019. We enrolled 62 pregnant women with acute dental pain caused by posterior teeth with symptomatic irreversible pulpitis or symptomatic apical periodontitis. Among the 62 participants, 34 received TT, and 28 chose nontreatment during pregnancy. We evaluated the pain relief with the verbal numerical rating scale (VNRS) scores of pain perception in the clinical study, as well as the anti-bacterial medicament filling conditions of canals of in vitro

models. Moreover, we investigated the safety outcomes, such as gestational age, neonatal head circumference, birth weight, and body length.

Results: The VNRS scores of the participants treated with TT were significantly lower than those of the nontreatment group 2 days after treatment (P<0.001). TT treated pregnant women experienced significantly more pain decreases in VNRS scores than their counterparts(P<0.05). The optimal anti-bacterial medicament filling conditions of canals of in vitro models by TT method were comparable with those of canals instrumented with traditional RCT method. Moreover, no significant differences of safety outcomes were observed between pregnant women of these two groups.

Conclusion: The transitional therapy is efficient in alleviating acute dental pain of posterior teeth of pregnant women with symptomatic irreversible pulpitis and symptomatic apical periodontitis, and maintaining painless chains throughout pregnancy with no adverse effects on neonatal birth outcomes

Zhang H, Lin X. Research progress on the potential correlation between polycystic ovary syndrome and periodontal disease. J Int Med Res. 2024 Nov;52(11):3000605241300096. doi: 10.1177/03000605241300096. PMID: 39600040; PMCID: PMC11603522.

ABSTRACT

Over the past few years, the correlation between periodontal disease (PD) and polycystic ovary syndrome (PCOS) has attracted widespread attention owing to the increased incidence of these diseases. Several studies have suggested a possible link between the two. In this narrative review, we examined the epidemiology, common risk factors, and pathological mechanisms of PCOS and PD to investigate the potential association between these diseases. Evidence from the literature indicates that PCOS and PD can interact with each other. Common risk factors, such as microbial homeostasis imbalance owing to dysbiosis, along with multiple hormone and inflammatory mediators, as well as inflammatory responses owing to oxidative stress and oxidative responses owing to ferroptosis, are all associated with the pathogenesis of both diseases. Further studies are needed to clarify the specific mechanisms of interaction between PCOS and PD, which could clarify future directions in disease management and combined multidisciplinary treatment.

Zhao M, Chang H, Yue Y, Zeng X, Wu S, Ren X. The association between periodontal disease and adverse pregnancy outcomes: a bibliometric analysis from 2000 to 2023. Front Med (Lausanne). 2025 Jan 21;12:1526406. doi: 10.3389/fmed.2025.1526406. PMID: 39906598; PMCID: PMC11790436.

ABSTRACT

Background: Periodontal disease (PD) refers to a chronic inflammatory disorder affecting the supporting tissues of the teeth triggered by bacterial infection and is recognized to promote systemic inflammation, leading to dysfunction in specific organs. Adverse pregnancy outcomes (APOs), including preterm birth, small for gestational age infants, gestational diabetes and preeclampsia, are linked to pregnancy complications. Recently, the correlation between periodontal disease and adverse pregnancy outcomes has garnered global attention. However, bibliometric studies in this area remain limited. This study aimed to visualize knowledge framework and research trends concerning the relationship between periodontal disease and adverse pregnancy outcomes from 2000 to 2023 through bibliometric approaches.



Methods: On September 22, 2024, articles and reviews on the connection between periodontal disease and adverse pregnancy outcomes were retrieved from the Web of Science Core Collection (WOSCC). CiteSpace [6.3.R1 (64-bit) Advanced] was used to perform knowledge mapping and bibliometric studies.

Results: Over the past 23 years, 932 articles from 73 countries were collected, with the U.S. contributing over one-third (355), followed by Brazil (85) and India (59). The literature in this field has experienced multiple growth phases since 2000, with particularly rapid growth observed after 2019. The University of North Carolina (n = 34, 3.65%) is the leading institution in terms of publication output, primarily representing the U.S. Notably, the Journal of Periodontology and the American Journal of Obstetrics and Gynecology are the most frequently cited journals in the fields of periodontology and obstetrics, respectively. These publications are authored by 94 researchers, with Steven Offenbacher being both the most productive and most highly cited author, making significant contributions to the field. A visual analysis of keywords identifies “oral microbiota,” “oral health,” “adverse pregnancy outcomes,” and “global burden” as emerging research hotspots in exploring the correlation between periodontal disease and adverse pregnancy outcomes.

Conclusions: This first bibliometric and visual analysis of periodontal disease and adverse pregnancy outcomes offers a concise overview of the field and suggests future research should focus on risk factors, high-risk populations, oral microbiota, mechanisms, interventions, and international collaboration.

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Conclusiones
destacadas



Conclusiones destacadas

1. Periodontitis y embarazo: riesgos obstétricos
2. Impacto de la terapia periodontal en embarazadas
3. Microbioma oral y disbiosis en embarazadas
4. Factores psicosociales y conductuales en embarazadas
5. Ginecología general y periodoncia
6. Dolor dental y tratamientos seguros en gestantes
7. Impacto en fertilidad masculina y descendencia
8. Tendencias científicas y relevancia internacional

CONCLUSIÓN CLAVE

1. PERIODONTITIS Y EMBARAZO: RIESGOS OBSTÉTRICOS

- **Parto prematuro, bajo peso y preeclampsia** aparecen de forma repetida como riesgos aumentados en mujeres con periodontitis no tratada.
- Varios estudios observacionales (Sharma 2024, Tsikouras 2024) y metaanálisis (Wu 2024, Xu 2025) confirman esta asociación.
 - La odds ratio alcanza 2.69 (Sharma), reforzando la relevancia clínica.
 - La **inflamación sistémica** inducida por la periodontitis se propone como mecanismo clave, actuando vía **prostaglandinas** e **interleucinas proinflamatorias** (Tsikouras, Teles).
- El estudio genético de **Mendelian Randomisation** (Tang 2024) solo encuentra relación causal firme con el **bajo peso al nacer**, pero no con otros desenlaces, lo que sugiere complejidad multifactorial.

2. IMPACTO DE LA TERAPIA PERIODONTAL EN EMBARAZADAS

- El **detartraje supragingival** (Sayeed 2024) reduce significativamente indicadores periodontales en embarazadas con síndrome metabólico, y mejora la forma clínica de la enfermedad.
- Terapias combinadas (SRP + clorhexidina + higiene oral) **disminuyen el riesgo de parto prematuro** hasta en un 75% según metaanálisis de ECA (Wu 2024).
- Sin embargo, los efectos preventivos sobre **gingivitis gestacional** y desenlaces obstétricos varían según la calidad del estudio (Xu 2025): los de mayor rigor muestran resultados más neutros.
- En todos los casos, **no se observan efectos adversos obstétricos** tras el tratamiento periodontal.

3. MICROBIOMA ORAL Y DISBIOSIS EN EMBARAZADAS

- El embarazo provoca **cambios fisiológicos adaptativos** (Zakaria 2022) que afectan al microbioma oral, vaginal e intestinal.
- Las alteraciones del **microbioma oral** pueden inducir una disbiosis que se asocia a desenlaces adversos (Ye 2021), aunque la causalidad no está plenamente establecida.
- "Porphyromonas gingivalis" se destaca como patógeno clave en el vínculo con enfermedades sistémicas y obstétricas (Zhang KK 2023).



4. FACTORES PSICOSOCIALES Y CONDUCTUALES EN EMBARAZADAS

- La **alfabetización en salud oral** y las **prácticas previas al embarazo** predicen la conducta durante la gestación (Tenenbaum 2023).
- Los factores sociales, creencias y locus de control influyen directamente en la higiene bucal y en la asistencia dental, reforzando la necesidad de **educación estructurada** como prevención.

5. GINECOLOGÍA GENERAL Y PERIODONCIA

- En **menopausia**, la deficiencia estrogénica se relaciona con **mayor riesgo de periodontitis**, xerostomía y síndrome de boca ardiente (Shrivastava 2024).
- Se proponen tratamientos tópicos, hormonales y abordajes interdisciplinarios para mejorar calidad de vida.
- En **síndrome de ovario poliquístico (SOP)** se describen mecanismos compartidos con periodontitis: **disbiosis, estrés oxidativo, ferroptosis** e **inflamación crónica** (Zhang H 2024), abriendo la vía a tratamientos conjuntos.

6. DOLOR DENTAL Y TRATAMIENTOS SEGUROS EN GESTANTES

- La **terapia transicional** (Zhang F 2022) para pulpitis y apicitis en embarazadas reduce el dolor eficazmente y **no afecta parámetros neonatales**, ofreciendo una opción segura durante la gestación.

7. IMPACTO EN FERTILIDAD MASCULINA Y DESCENDENCIA

- En modelo animal (Zeffa 2025), la periodontitis en ratas macho afecta negativamente la **fertilidad**, la **espermatogénesis** y provoca **malformaciones fetales**, reforzando la dimensión sistémica e intergeneracional de la inflamación periodontal.

8. TENDENCIAS CIENTÍFICAS Y RELEVANCIA INTERNACIONAL

- El análisis bibliométrico (Zhao 2025) muestra un crecimiento acelerado de investigaciones desde 2019.
- EE. UU., Brasil e India lideran el campo.
 - Los términos emergentes incluyen: **oral microbiota, pregnancy outcomes, global burden, y intervención preventiva.**

CONCLUSIÓN CLAVE

La salud periodontal es un determinante crítico en el embarazo y la salud ginecológica. Su control mejora desenlaces materno-fetales, reduce complicaciones y debe integrarse de forma **activa y protocolizada** en la atención prenatal, ginecológica y en mujeres con SOP (Síndrome de Ovario Poliquístico) o menopausia.

¿Qué caracteriza al SOP?

- **Alteraciones hormonales:** exceso de andrógenos (hormonas masculinas).
- **Ciclos menstruales irregulares** o ausencia de ovulación.
- **Ovarios con múltiples quistes** visibles en ecografía (aunque no siempre presentes).
- **Síntomas clínicos frecuentes:** acné, hirsutismo (vello corporal excesivo), sobrepeso u obesidad, y problemas de fertilidad.

¿Qué relación tiene con la periodontitis?

Estudios recientes muestran que el SOP y la periodontitis comparten mecanismos comunes como:

- **Inflamación crónica de bajo grado**
- **Disbiosis bacteriana**
- **Estrés oxidativo**
- **Alteraciones inmunológicas**



Tabla Conceptual – Relación entre Ginecología/Obstetricia y Periodontitis

Ámbito Ginecológico / Obstétrico	Relación con Periodontitis	Nivel de Evidencia
Embarazo (general)	Aumento del riesgo de parto prematuro, bajo peso al nacer, preeclampsia y gingivitis gestacional.	Alto (metaanálisis, RCTs, MR)
Terapia periodontal en embarazadas	Reducción de eventos adversos sin efectos negativos sobre el feto.	Alto (ECA, revisiones)
Microbioma oral–vaginal	Interacción directa por disbiosis y migración microbiana entre cavidades oral y vaginal.	Moderado–Alto (revisiones)
Menopausia	Pérdida ósea alveolar, xerostomía, síndrome de boca ardiente por hipogonadismo.	Alto (revisiones clínicas)
Síndrome de Ovario Poliquístico (SOP)	Mecanismos compartidos: disbiosis, inflamación crónica, estrés oxidativo, ferroptosis.	Moderado (revisión narrativa)
Fertilidad masculina y salud fetal	En modelos animales, la inflamación periodontal reduce la fertilidad y afecta al desarrollo fetal.	Moderado (modelo animal)
Alfabetización y conducta oral en embarazo	Las prácticas previas y el nivel educativo predicen higiene y salud oral durante el embarazo.	Alto (scoping review)
Dolor dental en gestantes (endodoncia)	El tratamiento transicional reduce el dolor sin comprometer resultados neonatales.	Moderado–Alto (cohorte clínica)

La salud periodontal se ha consolidado como un componente clave en la ginecología y obstetricia moderna. Numerosos estudios de alta calidad demuestran que las infecciones periodontales no tratadas aumentan significativamente el riesgo de parto prematuro, bajo peso al nacer y preeclampsia. Estos efectos se deben tanto a la diseminación bacteriana como al impacto de la inflamación sistémica. Además, la gestación provoca alteraciones inmunológicas y hormonales que afectan el microbioma oral, facilitando la gingivitis del embarazo. En la menopausia, la caída estrogénica favorece la periodontitis y la pérdida ósea, mientras que en el síndrome de ovario poliquístico se detectan mecanismos patogénicos comunes con la enfermedad periodontal. La evidencia también respalda que el tratamiento periodontal en embarazadas es seguro y beneficioso, y que factores psicosociales como la alfabetización en salud bucal influyen directamente en los resultados obstétricos. La integración de la salud oral en protocolos ginecológicos y obstétricos resulta, por tanto, esencial para mejorar la salud maternofetal y reducir desigualdades sanitarias.

03

03

Conclusiones destacadas
individuales



Conclusiones destacadas individuales

1. Adeniyi et al., 2024, Q1
2. Agbor et al., 2025, Q3
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4. Alkhurayji et al., 2024, Q2
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7. Alwaeli & Al-Jundi, 2005, Q2
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1. ADENIYI ET AL., 2024, Q1

Tema: Revisión sobre la relación entre salud oral y salud mental durante el embarazo.

Contenido: Esta revisión rápida analiza 22 estudios sobre la asociación entre enfermedad periodontal y estados psicológicos como ansiedad, depresión y estrés en embarazadas y durante el primer año postparto. Se identifican tres vías de interacción: psicológica (ansiedad dental que limita el acceso a tratamientos), conductual (depresión que reduce la motivación para el autocuidado) y fisiológica (el estrés se asocia a biomarcadores como cortisol salival, que mejora con tratamiento periodontal). También se señala que la salud mental materna afecta al riesgo de caries en la descendencia. Se propone implementar cribado combinado oral-mental, intervenciones integradas y rutas de derivación cruzadas.

Resumen: La salud periodontal y mental están entrelazadas en el embarazo; su abordaje conjunto puede mejorar resultados materno-infantiles.

2. AGBOR ET AL., 2025, Q3

Tema: Estudio transversal sobre salud bucal de gestantes en Camerún.

Contenido: En 294 embarazadas se observó una alta prevalencia de caries (60.2%), gingivitis (51.3%) y periodontitis (45.2%). El 75% tenía buen conocimiento del cepillado, pero solo el 30% había visitado al dentista. La mayoría presentaba cálculo dental, y una proporción significativa sufría halitosis, sangrado, inflamación o epulis gravídico. El 75% necesitaba restauraciones. Se concluye que el estado de salud oral es deficiente y requiere intervención.

Resumen: La mayoría de embarazadas evaluadas presentan enfermedades periodontales no tratadas y bajo uso de servicios odontológicos.

3. ALGHAMDI ET AL., 2023, Q3

Tema: Impacto de los anticonceptivos orales en salud periodontal.

Contenido: En una encuesta a 125 mujeres, 94 usaban anticonceptivos orales, de las cuales el 36.2% tenía enfermedades gingivales y un 51.6% reportaba sangrado al cepillarse. Solo el 13.8% acudía al dentista con regularidad. La duración del uso era mayoritariamente de 1-5 años. Se observaron caries, úlceras orales y escasa atención preventiva. Se destaca la necesidad de programas de higiene específicos para estas pacientes.

Resumen: El uso de anticonceptivos orales se asocia con peor salud periodontal y escaso seguimiento odontológico.



4. ALKHURAYJI ET AL., 2024, Q2

Tema: Nivel de conocimiento sobre periodontitis y parto prematuro en embarazadas saudíes.

Contenido: En este estudio transversal con 312 embarazadas, solo el 29.5% sabía de la relación entre enfermedad periodontal y parto prematuro o bajo peso. Un tercio no visitaba al dentista durante el embarazo. Se detectó una asociación significativa entre nivel educativo y grado de conocimiento. Los autores proponen reducir la ansiedad ante el tratamiento dental e incluir educación oral en atención prenatal.

Resumen: Las embarazadas tienen bajo conocimiento sobre los efectos sistémicos de la periodontitis; se requiere educación dirigida.

5. ALNASSER ET AL., 2023, Q3

Tema: Revisión sistemática de ECA sobre tratamiento periodontal y resultados gestacionales.

Contenido: Revisión de 23 ensayos clínicos sobre el efecto del tratamiento periodontal en mujeres embarazadas. Confirma la asociación entre enfermedad periodontal y desenlaces adversos (prematuridad, bajo peso, preeclampsia), y señala que el tratamiento reduce estos riesgos. Aun así, los autores consideran necesario definir mejor qué tipo de terapia es más eficaz y en qué momento.

Resumen: El tratamiento periodontal puede reducir eventos adversos del embarazo, pero aún faltan estudios con mayor precisión terapéutica.

6. ALSHARIEF & ALABDURUBALNABI, 2023, Q2

Tema: Mecanismos de los patógenos periodontales en complicaciones del embarazo.

Contenido: Esta revisión narrativa analiza el papel de las bacterias periodontales y sus factores de virulencia (citocinas, prostaglandinas) en desencadenar inflamación sistémica durante el embarazo. Se discuten los efectos sobre el eje feto-placentario y cómo esto puede derivar en parto prematuro, preeclampsia o diabetes gestacional. También se repasan estudios que muestran que el tratamiento periodontal puede mitigar estos efectos.

Resumen: La inflamación periodontal puede afectar negativamente el embarazo mediante mecanismos inmunológicos y sistémicos.

7. ALWAELI & AL-JUNDI, 2005, Q2

Tema: Conocimiento sobre salud periodontal en embarazadas jordanas.

Contenido: En una encuesta a 275 embarazadas, el 88% reconocía el sangrado como signo de enfermedad, pero solo el 16.4% sabía qué es la placa dental. Apenas el 5.1% creía en la relación entre enfermedad periodontal y parto prematuro. Aunque el 71.6% identificaba la causa principal de enfermedad gingival, más de la mitad no aumentaba el cepillado durante el embarazo.

Resumen: Existe una gran brecha de conocimiento entre embarazadas sobre salud gingival y sus consecuencias gestacionales.

8. ARBILDO-VEGA ET AL., 2024, Q2

Tema: Revisión tipo “umbrella” sobre tratamiento periodontal en embarazadas y riesgo de parto prematuro.

Contenido: Se analizaron 24 revisiones sistemáticas (con o sin metaanálisis) sobre tratamiento periodontal en embarazadas. La mayoría indica que la intervención reduce el riesgo de parto prematuro y bajo peso al nacer. Se aplicó la herramienta AMSTAR-2 para valorar calidad. La conclusión es clara: existe alta confianza en que el tratamiento periodontal es una medida efectiva para mejorar los resultados perinatales.

Resumen: El tratamiento periodontal en el embarazo reduce significativamente el riesgo de prematuridad y bajo peso al nacer.

9. ASA'AD ET AL., 2015, Q3

Tema: Nivel de conciencia sobre periodontitis en gestantes saudíes.

Contenido: Encuesta a 300 embarazadas del centro y este de Arabia Saudí. Aunque el 73% creía que la enfermedad gingival es prevenible, solo el 12% conocía la posible relación con el embarazo. El 21% definía adecuadamente la placa dental. La mayoría reconocía el daño del tabaco, pero no entendía la implicación periodontal. Se destaca la necesidad de campañas educativas en centros maternos.

Resumen: Existe bajo conocimiento en gestantes sobre la conexión entre enfermedad periodontal y embarazo; se recomienda formación específica.

10. BI ET AL., 2021, Q1

Tema: Efecto del tratamiento periodontal sobre mortalidad y morbilidad perinatal.

Contenido: Metaanálisis de 20 ECA (8171 embarazadas). El tratamiento periodontal reduce la mortalidad perinatal (RR 0.53), el parto prematuro (RR 0.78) y aumenta el peso al nacer (+200 g). No se asoció a cambios en preeclampsia ni malformaciones. La heterogeneidad fue baja para mortalidad, media para prematuridad y alta para peso. Se concluye que tratar la periodontitis en el embarazo mejora resultados clave.



Resumen: El tratamiento periodontal en embarazadas mejora el peso neonatal y reduce riesgos de parto prematuro y mortalidad.

11. BOYAPATI R ET AL., 2021, Q2

Tema: Influencia de hormonas sexuales femeninas sobre el periodonto en diferentes etapas de la vida.

Contenido: Esta revisión explica cómo las fluctuaciones de estrógenos y progesterona en pubertad, embarazo, uso de anticonceptivos y menopausia condicionan una respuesta gingival exagerada ante placa dental. El periodonto se vuelve más susceptible en esos momentos clave de la vida reproductiva femenina.

Resumen: Las hormonas sexuales modulan la inflamación periodontal, aumentando el riesgo en fases reproductivas.

12. BUTERA A ET AL., 2023, Q2

Tema: Asociación entre periodontitis durante el embarazo y resultados adversos obstétricos.

Contenido: Revisión de 16 estudios sobre gestantes, concluye que el 11 % de embarazadas desarrollan periodontitis, significativamente vinculada a parto prematuro, bajo peso al nacer y diabetes gestacional por transporte bacteriano y respuesta inmune.

Resumen: La periodontitis en el embarazo se relaciona consistentemente con mayores riesgos obstétricos.

13. CARROUEL F ET AL., 2023, Q1

Tema: Microbiota interdental en gestantes de 3 meses con periodonto intacto.

Contenido: Estudio de PCR cuantitativa detecta altos niveles de patógenos (complejos rojo y naranja) en mujeres con salud gingival aparente, junto a sangrado interdental. Frutas y vegetales y cepillado ≥ 2 /día se asocian a menor carga bacteriana.

Resumen: Incluso sin periodontitis clínica, gestantes con sangrado interdental presentan microbiota disbiótica de alto riesgo.

14. CLÉMENT C ET AL., 2023, Q2

Tema: Eficacia de cepillos sonic vs manual en gingivitis del embarazo.

Contenido: Ensayo clínico aleatorizado de cuatro brazos evalúa cepillos manuales y sónicos en gestantes (15–18 semanas), comparando sangrado, placa, encía y bolsas periodontales tras 3 meses, además de aceptabilidad del dispositivo.

Resumen: Comparar cepillos para optimizar control de biofilm puede reducir la gingivitis gestacional.

15. DAALDEROP LA ET AL., 2018, Q1

Tema: Panorama global de revisiones sistemáticas sobre enfermedad periodontal y resultados del embarazo.

Contenido: Revisión general de 23 sistemáticas con datos de asociación consistente con parto prematuro (RR 1.6), bajo peso (RR 1.7), preeclampsia (OR 2.2) y pretermino-BW (RR 3.4). El riesgo atribuible poblacional es importante (5-55 %).

Resumen: Existe fuerte evidencia de que la periodontitis eleva el riesgo de múltiples complicaciones obstétricas.

16. DI STEFANO M ET AL., 2022, Q2

Tema: Microbioma oral en salud periodontal y periodontitis: revisión preventiva y terapéutica.

Contenido: Revisión crítica del microbioma oral sano vs enfermo. Se repasan los mecanismos de disbiosis, inflamación y las principales bacterias implicadas, además del impacto en diagnósticos y estrategias terapéuticas futuras.

Resumen: La modulación del microbioma es clave para prevenir y tratar la enfermedad periodontal.

17. EBINGHAUS M ET AL., 2024, Q1

Tema: Necesidades de embarazadas sobre orientación interprofesional en salud oral.

Contenido: Estudio cualitativo en Alemania con embarazadas y profesionales, revela falta de información clara sobre salud bucal, incertidumbre sobre seguridad de visitas odontológicas y deseo de mensajes consistentes de matronas, obstetras y dentistas.

Resumen: Mejorar educación oral prenatal mediante colaboración interprofesional podría reducir riesgos perinatales.



18. ELDESSOUKY HF ET AL., 2024, Q1

Tema: Tratamiento no quirúrgico de periodontitis en mujeres menopáusicas con omega-3.

Contenido: Ensayo RCT en mujeres menopáusicas con periodontitis: SRP con suplementos de PUFA frente a placebo. El grupo experimental mostró mejoras significativas en indicadores clínicos y descenso de AST en fluido crevicular.

Resumen: Suplementar omega-3 durante el tratamiento periodontal mejora resultados en postmenopáusicas.

19. FIGUERO E ET AL., 2020, Q1

Tema: Mecanismos que conectan periodontitis y resultados adversos del embarazo.

Contenido: Revisión de mecanismos directos (bacteriemia, inflamación fetal-placentaria) e indirectos (citocinas, prostaglandinas), validando rutas de transmisión y respuesta inmunitaria que explican PTB y preeclampsia.

Resumen: Los mecanismos inmuno-inflamatorios explican cómo la periodontitis impacta negativamente al embarazo.

20. FOROUGHI M ET AL., 2025, Q1

Tema: Diagnóstico de enfermedades periodontales mediante plataformas de biomarcadores.

Contenido: Revisión narrativa que detalla cómo patógenos periodontales influyen en enfermedades sistémicas, incluyendo resultados adversos del embarazo. Presenta tecnologías emergentes como biosensores y microfluídica para detección múltiple de biomarcadores (IL-1 β , TNF- α , LPS).

Resumen: Tecnologías diagnósticas rápidas podrían integrar salud oral y sistémica en programas preventivos.

21. GARE J ET AL., 2023, Q1

Tema: Prevalencia y factores de riesgo de gingivitis en gestantes de 3 meses.

Contenido: Estudio transversal en Senegal con 220 embarazadas nulíparas. El 88% presentó gingivitis, con 73% de casos severos. El sangrado interdental fue elevado (66,7%). Factores protectores: alto consumo de frutas/verduras. Factores de riesgo: actividad laboral, educación alta, presencia de placa y pérdida de inserción.

Resumen: La gingivitis está muy extendida en embarazadas y se asocia a factores conductuales y clínicos modificables.

22. GOMULINSKI S ET AL., 2025, Q1

Tema: Preferencias de los pacientes en terapias periodontales e implantológicas.

Contenido: Revisión exploratoria de 8 estudios con 1642 pacientes. La mayoría prefiere conservar dientes y opta por puentes implantosoportados si no es posible. La predictibilidad del tratamiento es clave. Mujeres, jóvenes y personas con mayor percepción de salud oral muestran mayor disposición a pagar por implantes.

Resumen: Los pacientes priorizan la conservación dental y valoran la estabilidad terapéutica; se necesita más investigación longitudinal.

23. GREENBERG JM ET AL., 2022, Q1

Tema: Microbiota oral y vaginal de ratonas preñadas como modelo para estudiar infecciones obstétricas.

Contenido: Se caracteriza la microbiota oral, vaginal, intestinal y pulmonar en ratonas gestantes. Se halló similitud entre *Rodentibacter* vaginal y *Lactobacillus* humano. La microbiota vaginal puede cultivarse fácilmente, facilitando estudios sobre infecciones intraamnióticas y parto prematuro.

Resumen: El modelo murino permite reproducir y estudiar microbiotas relevantes para complicaciones del embarazo humano.

24. HUNG M ET AL., 2023, Q1

Tema: Factores de riesgo de periodontitis en adultos jóvenes.

Contenido: Solo 3 estudios cumplieron criterios de inclusión. Factores como sangrado al cepillarse, baja densidad ósea, sobrepeso y tabaquismo fueron asociados a periodontitis estadio II/III en menores de 40 años.

Resumen: Hay poca investigación sobre periodontitis en jóvenes, pero se identifican factores modificables relevantes.

25. IBRAHEEM SA ET AL., 2025, Q2

Tema: Periodontitis en adolescentes embarazadas en Nigeria: evidencia insuficiente.



Contenido: De 768 estudios, ninguno cumplió criterios. Solo 4 estudios indirectos incluyeron datos de adolescentes y jóvenes. La prevalencia de enfermedad periodontal osciló entre 45,8% y 100%. Se identifican diferencias por trimestre y edad.

Resumen: Faltan estudios representativos sobre salud periodontal en embarazadas jóvenes africanas; se requiere investigación urgente.

26. ISOLA G ET AL., 2023, Q1

Tema: Relación entre periodontitis y enfermedades sistémicas.

Contenido: Revisión de rutas etiopatogénicas compartidas entre periodontitis y patologías como diabetes, enfermedades cardiovasculares, digestivas, reproductivas y aterosclerosis. Se destaca el papel de infecciones orales a distancia.

Resumen: La periodontitis debe entenderse como factor sistémico clave con implicaciones diagnósticas y terapéuticas.

27. JAKOVLJEVIC A ET AL., 2021, Q1

Tema: Asociación entre periodontitis apical materna y resultados adversos del embarazo.

Contenido: Revisión sistemática de 3 estudios (2 caso-control, 1 transversal) con evidencia limitada pero indicativa de asociación entre periodontitis apical y resultados como parto prematuro. Se detectan fallos metodológicos importantes.

Resumen: Se observa posible vínculo entre patología endodóntica y riesgos obstétricos, pero la evidencia aún es escasa.

28. JAWED STM ET AL., 2025, Q3

Tema: Cambios hormonales y salud gingival femenina.

Contenido: Revisión narrativa de efectos hormonales en gingiva durante pubertad, menstruación, embarazo, anticonceptivos y menopausia. Se detallan condiciones como gingivitis puberal, menstrual, embarazo y tumor piogénico. También se describe xerostomía y osteoporosis postmenopáusica.

Resumen: Las fluctuaciones hormonales femeninas modulan la inflamación gingival y aumentan el riesgo de periodontitis.

29. KAMAL ASAAD N ET AL., 2023, Q3

Tema: Gingivitis y acidez salival según fase menstrual.

Contenido: En 25 mujeres jóvenes, se observó aumento de inflamación gingival y placa en fase premenstrual respecto a fase menstrual. El pH salival disminuyó en fase premenstrual.

Resumen: Las fases del ciclo menstrual influyen en la inflamación gingival; la prevención debe adaptarse a estos cambios.

30. KHAN NS ET AL., 2023, Q3

Tema: Tratamiento periodontal durante el embarazo y resultados obstétricos.

Contenido: Revisión sistemática de revisiones (17 estudios). Se hallaron asociaciones moderadas con bajo peso, parto prematuro y bajo peso prematuro, pero no con preeclampsia. Aunque la evidencia es mixta, el tratamiento periodontal se considera seguro y beneficioso.

Resumen: El tratamiento periodontal durante el embarazo es seguro y puede reducir complicaciones, aunque la evidencia aún es heterogénea.

31. KIM MY & PANG EK, 2025, Q1

Tema: Relación bidireccional entre periodontitis y salud sistémica, incluyendo embarazo.

Contenido: Revisión narrativa que abarca datos epidemiológicos, mecanismos biológicos e implicaciones clínicas. La periodontitis (7.4–11.2 % de prevalencia) está vinculada a obesidad, diabetes, cardiopatías, ERC, enfermedades inflamatorias, cánceres, trastornos neurodegenerativos, mentales, autoinmunes y resultados gestacionales adversos. Los mecanismos incluyen biofilm disbiótico, inflamación crónica, diseminación de patógenos y elevación de citocinas (IL-6, TNF- α , CRP). El tratamiento periodontal mejora diversas condiciones sistémicas.

Resumen: La periodontitis impacta la salud general y requiere un enfoque multidisciplinar integrado.

32. KREDIG C ET AL., 2025, Q1

Tema: Inflamación periodontal y biomarcadores en adolescentes durante ortodoncia con alineadores.

Contenido: Estudio prospectivo en 50 adolescentes (\approx 13 años), midiendo bacterias periodontales, aMMP-8 e índice gingival durante tratamiento con clear aligners. No se observó aumento de inflamación o aMMP-8. Se identificaron cambios en bacterias principalmente de los complejos naranja y verde (Capnocyto-



phaga spp., Fusobacterium spp.). Índice gingival correlacionó fuertemente con niveles de aMMP-8; sin efecto del genotipo IL-1.

Resumen: En adolescentes con buena higiene, los alineadores no aumentan inflamación periodontal pese a predisposición genética.

33. LIU X ET AL., 2024, Q1

Tema: Impacto del IMC y subtipos de SOP en salud periodontal en mujeres chinas.

Contenido: Estudio caso-control retrospectivo en 88 mujeres con SOP y periodontitis vs 82 controles. Las mujeres con SOP presentaron mayor índice de sangrado gingival (GBI), especialmente en IMC ≥ 24 kg/m², aunque menor profundidad de bolsa en IMC < 24 . Se concluye que SOP y obesidad pueden agravar la inflamación gingival.

Resumen: El SOP, especialmente con IMC elevado, se asocia a mayor inflamación gingival en mujeres con periodontitis.

34. LIU Z ET AL., 2023, Q1

Tema: Panorama bibliométrico de la enfermedad periodontal en el embarazo.

Contenido: Análisis de 1 162 publicaciones (2000-2022) usando Citespace, VOSviewer, Bibliometrix. EE. UU. e Institución más influyente (UNC/Offenbacher) lideran. Las revistas Q1 dominan el campo. Dos ejes temáticos emergentes: microbiología oral (Fusobacterium nucleatum) y salud pública (obesidad, resultados gestacionales, calidad de vida). Colaboración interdisciplinaria limitada.

Resumen: La investigación sobre periodontitis en embarazo crece multidisciplinariamente; microbiología y salud pública son tendencias clave.

35. LO GIUDICE R ET AL., 2024, Q1

Tema: Prácticas de higiene oral y salud bucal en embarazadas en Italia.

Contenido: Estudio transversal (n = 72) en hospitales universitarios. DMFT promedio 7.9, OHI promedio 3.6. Solo el 19.4 % había visitado odontólogo en 6 meses; el 97.2 % se cepillaba una vez al día. El 72.2 % refería sangrado gingival y el 38.9 % hipersensibilidad dental, empeorados durante la gestación.

Resumen: Baja adherencia a higiene y cuidado dental en gestantes; falta de cuidado regular y prevalencia alta de gingivitis y sensibilidad.

36. MACHADO V ET AL., 2023, Q1

Tema: Calidad metodológica y evidencia de asociación entre periodontitis materna y resultados adversos del embarazo.

Contenido: Revisión umbrella de 43 revisiones sistemáticas (34 con metaanálisis). Se encuentra asociación fuerte entre periodontitis y parto prematuro, bajo peso y diabetes gestacional; evidencia sugerente en preeclampsia. El efecto del tratamiento periodontal en prevenir APOs es incierto debido a heterogeneidad.

Resumen: Se confirma fuerte asociación observacional; se requiere más estudios robustos sobre la eficacia del tratamiento periodontal.

37. MACHADO V ET AL., 2020, Q2

Tema: Estado periodontal en mujeres referidas para tratamiento de fertilidad vs controles.

Contenido: Estudio piloto caso-control con 18 mujeres en clínica de fertilidad vs 18 controles emparejadas. Las mujeres en tratamiento de fertilidad mostraron mayor profundidad de sondaje, pérdida de inserción y superficie epitelial periodontal. No se observó impacto en calidad de vida relacionada con salud oral, sugiriendo falta de conciencia.

Resumen: Pacientes en tratamiento de fertilidad presentan peor salud periodontal sin percepciones asociadas, lo que sugiere falta de conocimiento.

38. MAN Y ET AL., 2024, Q1

Tema: Efectos de la terapia hormonal (HRT) sobre la progresión de periodontitis en postmenopáusicas.

Contenido: Cohorte prospectiva con 97 mujeres en HRT vs 97 controles. En mujeres con periodontitis estadio II, HRT redujo SBI, BOP, IL-6, TNF- α al año, y redujo CAL y pérdida ósea alveolar al segundo año, con mejora de densidad ósea.

Resumen: La HRT puede inhibir inflamación periodontal y preservar hueso alveolar en mujeres postmenopáusicas con periodontitis.

39. MANDÒ C ET AL., 2022, Q2

Tema: Perfil epigenético en saliva de embarazadas obesas vs normopeso.



Contenido: Estudio observacional con 16 embarazadas obesas y 16 normopeso. Se analizaron microRNAs y metilación de SOCS3 y TGF- β 1. Se identificaron 20 microRNAs diferenciales y una hipometilación significativa en promotores de SOCS3 y TGF- β 1 en mujeres obesas. Estos resultados indican vías inflamatorias y metabólicas alteradas.

Resumen: La saliva muestra alteraciones epigenéticas en obesidad gestacional que podrían servir como biomarcadores de riesgo.

40. MARCICKIEWICZ J ET AL., 2025, Q1

Tema: Vínculos entre disbiosis oral y salud reproductiva femenina (SOP, endometriosis, APOs).

Contenido: Revisión que destaca cómo la microbiota oral alterada se relaciona con infertilidad (SOP, endometriosis) y complicaciones gestacionales como parto prematuro, bajo peso y aborto. Se proponen rutas inflamatorias sistémicas y transferencia microbiana.

Resumen: La disbiosis oral podría contribuir a desordenes reproductivos femeninos y a resultados adversos en el embarazo.

41. MÁRQUEZ-ARRICO CF ET AL., 2024, Q1

Tema: Asociación entre enfermedad periodontal e infertilidad idiopática.

Contenido: Revisión sistemática con 4 871 pacientes (732 hombres y 4 139 mujeres). Se detectó mayor prevalencia de enfermedad periodontal en personas infértiles versus controles. Los posibles mecanismos incluyen inflamación crónica, estrés oxidativo, resistencia a la insulina, presentes en patologías como SOP, obesidad y diabetes que también se asocian con periodontitis.

Resumen: Existe evidencia de asociación entre periodontitis e infertilidad, probablemente mediada por inflamación sistémica e IR.

42. NANNAN M ET AL., 2022, Q1

Tema: Mecanismos y manejo de periodontitis durante el embarazo y sus desenlaces adversos.

Contenido: Revisión de evidencia sobre cómo patógenos periodontales y sus metabolitos causan partos prematuros, bajo peso y preeclampsia. Incluye análisis de suplementos nutricionales y eficacia del tratamiento periodontal como estrategias preventivas clínicas.

Resumen: La enfermedad periodontal influye en desenlaces obstétricos; nutrición y tratamiento periodontal son claves en la prevención.

43. PIIRAINEN V ET AL., 2025, Q2

Tema: Perfil bacteriano oral, vaginal, rectal y del calostro en cerdas periparturientas.

Contenido: Estudio en 32 cerdas finlandesas donde se caracterizó la microbiota de diversos sitios mediante secuenciación 16S. Se identificaron géneros comunes como Fusobacterium y Streptococcus comparados entre cavidades oral y vaginal.

Resumen: En modelos animales, existe correlación microbiana entre boca, vagina y leche, relevante para estudiar transmisión y riesgo obstétrico.

44. PRODAN-BARBULESCU C ET AL., 2024, Q1

Tema: Alteraciones de la microbiota vaginal en 3er trimestre y su relación con parto prematuro.

Contenido: Caso-control con 89 mujeres que dieron a luz prematuramente y 106 a término. Se encontró mayor pH, neutrofilia y BV en el grupo PTB; presencia de Candida, Gardnerella, Mycoplasma y Ureaplasma asociada a mayor riesgo. Lactobacillus protector inversamente relacionado con PTB.

Resumen: Determinadas bacterias vaginales y bajo Lactobacillus son predictores significativos de parto prematuro.

45. RAMÍREZ V ET AL., 2023, Q1

Tema: Relación entre obesidad materna y severidad de periodontitis durante el embarazo.

Contenido: Estudio con 972 gestantes (36.8 % obesas). Obesidad se asoció significativamente con periodontitis estadio III y IV, incluso tras ajustar por placa dental y educación.

Resumen: La obesidad incrementa el riesgo y gravedad de periodontitis en gestantes.

46. RANI BALAJI VC ET AL., 2021, Q2

Tema: Salud periodontal en el primer trimestre y su relación con peso al nacer.

Contenido: Estudio prospectivo en 165 gestantes de ≤ 25 años. Se observó asociación entre gingivitis en el primer trimestre y nacimiento de bebés con bajo peso, ajustando por BMI y educación.

Resumen: La inflamación gingival temprana podría contribuir a bajo peso neonatal.



47. RATHI N & RECHE A, 2023, Q2

Tema: Riesgo de enfermedad periodontal en mujeres con SOP.

Contenido: Revisión narrativa que establece una posible relación bidireccional entre SOP y periodontitis, compartiendo factores como inflamación crónica, estrés oxidativo y obesidad.

Resumen: El SOP aumenta el riesgo de periodontitis; la condición periodontal podría empeorar la inflamación sistémica asociada.

48. ROMERO R ET AL., 2023, Q1

Tema: Cambios en la microbiota vaginal según edad gestacional, edad materna y paridad.

Contenido: Estudio longitudinal en 474 mujeres con 1 862 muestras. La microbiota suele ser dominada por Lactobacillus, pero varía según paridad, obesidad y otras características maternas. Se destaca la importancia de analizar estas dinámicas antes de estudiar asociaciones con complicaciones obstétricas.

Resumen: La composición vaginal cambia durante la gestación y está influida por variables maternas clave.

49. SAADAOUI M ET AL., 2021, Q2

Tema: Relación bidireccional entre microbioma oral y embarazo.

Contenido: Revisión de secuenciación que muestra que la microbiota oral varía en el embarazo, especialmente en el primer trimestre, y que la disbiosis puede contribuir a PTB, preeclampsia y bajo peso. Cambios hormonales aumentan riesgo de gingivitis y periodontitis.

Resumen: La microbiota oral se transforma durante el embarazo y puede impactar en desenlaces adversos.

50. SACHELARIE L ET AL., 2024, Q1

Tema: Impacto hormonal y de estilo de vida sobre salud oral durante el embarazo.

Contenido: Estudio prospectivo con 100 mujeres. Elevados niveles de estrógeno y progesterona se asociaron significativamente con alteraciones stomatognáticas y gingivales; buenos hábitos de higiene mostraron efecto protector. El vómito no fue factor relevante.

Resumen: Las hormonas gestacionales dominan la salud bucal materna; la higiene oral tiene efecto preventivo.

51. SAYEED G & VARGHESE SS, 2024, Q3

Tema: Efecto del detartraje supragingival en embarazadas con síndrome metabólico.

Contenido: Estudio intervencional con 47 embarazadas con SM. Se realizaron limpiezas supragingivales en la semana 20–21 de gestación, repitiendo mediciones 8 semanas después. Se observaron mejoras significativas en índice de placa, índice gingival y sangrado al sondaje. Todas las periodontitis severas remitieron a formas más leves.

Resumen: El detartraje mejora significativamente la salud periodontal en embarazadas con SM y puede favorecer al feto.

52. SHARMA S ET AL., 2024, Q3

Tema: Relación entre periodontitis materna y desenlaces adversos del embarazo.

Contenido: Estudio transversal en 145 mujeres del tercer trimestre en Nepal. Se diagnosticó periodontitis al 36.6 % de las participantes. Hubo una asociación significativa entre periodontitis y eventos adversos (OR = 2.69; p = 0.005), aunque otros factores como edad y comorbilidades no fueron significativos.

Resumen: La periodontitis materna triplica el riesgo de desenlaces adversos, subrayando su importancia en atención prenatal.

53. SHRIVASTAVA S, 2024, Q3

Tema: Salud oral en la menopausia: implicaciones clínicas y estrategias preventivas.

Contenido: Revisión sobre los efectos de la menopausia en la cavidad oral: xerostomía, enfermedad periodontal, síndrome de boca ardiente, alteraciones mucosas y óseas. Se destacan estrategias como tratamientos tópicos con flúor, terapia hormonal sustitutiva, educación y control del estrés.

Resumen: La menopausia afecta múltiples aspectos de la salud oral, requiriendo manejo dental preventivo y médico conjunto.

54. TANG L & CHEN K, 2024, Q2

Tema: Causalidad entre periodontitis y desenlaces adversos en el embarazo mediante randomización mendeliana.

Contenido: Estudio con datos genéticos GWAS europeos. No se hallaron asociaciones causales entre periodontitis y parto prematuro, aborto, preeclampsia ni hipertensión gestacional. Solo se encontró una asociación significativa con bajo peso al nacer (OR = 1.41; p = 0.028) con resultados cautelosos.



Resumen: Solo hay indicios débiles de relación causal entre periodontitis y bajo peso; no con otros desenlaces obstétricos.

55. TELES F ET AL., 2022, Q1

Tema: Papel de los virus en periodontitis y comorbilidades sistémicas.

Contenido: Revisión que amplía el enfoque tradicional bacteriano, proponiendo que virus como herpes o citomegalovirus pueden interactuar con bacterias periodontales y amplificar la inflamación sistémica, contribuyendo a enfermedades como Alzheimer, cáncer o preeclampsia.

Resumen: Los virus orales podrían actuar sinérgicamente con bacterias en enfermedades periodontales y sistémicas.

56. TENENBAUM A & AZOGUI-LEVY S, 2023, Q2

Tema: Alfabetización en salud oral y actitudes de embarazadas.

Contenido: Revisión de 67 estudios sobre conocimientos, actitudes, prácticas (KAP) y alfabetización en embarazadas. Se identificó una fuerte relación entre el entorno socioprofesional y los hábitos de salud oral durante el embarazo. Las prácticas previas predicen las del embarazo.

Resumen: La alfabetización y el contexto social determinan las prácticas orales en embarazadas; urge intervención educativa estructurada.

57. TSIKOURAS P ET AL., 2024, Q2

Tema: Relación entre periodontitis, parto prematuro y preeclampsia.

Contenido: Revisión narrativa que vincula periodontitis con prostaglandinas e IL-1 β , elementos implicados en parto prematuro y preeclampsia. Se destaca la necesidad de enfoques terapéuticos específicos durante el embarazo y de estudios más robustos.

Resumen: La inflamación periodontal podría estar implicada en eventos obstétricos graves; se requieren estudios clínicos amplios.

58. WU J ET AL., 2024, Q1

Tema: Meta-análisis de intervenciones periodontales y desenlaces obstétricos.

Contenido: Revisión de 20 ECA. Se analizaron estrategias como raspado + clorhexidina (SRP+CR), con o sin cepillo sónico y pulido dental. Se halló reducción significativa del parto prematuro y del bajo peso con intervenciones combinadas (OR 0.18–0.31).

Resumen: Las estrategias combinadas de tratamiento periodontal reducen el riesgo de parto prematuro y bajo peso en embarazadas.

59. XU H ET AL., 2025, Q2

Tema: Tratamiento periodontal en gingivitis gestacional y desenlaces adversos.

Contenido: Revisión y meta-análisis de 13 estudios. No se halló efecto significativo en gingivitis gestacional en estudios de alta calidad, aunque los de menor calidad sí mostraron beneficios. Los análisis confirmaron estabilidad de resultados.

Resumen: La evidencia es inconsistente, aunque hay posibles beneficios del tratamiento periodontal durante el embarazo.

60. YE C & KAPILA Y, 2021, Q1

Tema: Cambios en el microbioma oral durante el embarazo y efectos adversos.

Contenido: Revisión que describe alteraciones hormonales e inmunológicas que modifican el microbioma oral, generando disbiosis que podría afectar desenlaces como parto prematuro o bajo peso. Se destaca el vínculo entre microbioma oral y placentario.

Resumen: El embarazo altera el microbioma oral; su disbiosis podría impactar la salud fetal, aunque falta evidencia causal directa.

61. ZAKARIA ZZ ET AL., 2022, Q1

Tema: Cambios fisiológicos y microbioma durante el embarazo.

Contenido: Revisión que analiza cómo el embarazo, con sus cambios metabólicos, inmunológicos y endocrinos, altera el microbioma en diferentes localizaciones: intestino, cavidad oral y vagina. Estas modificaciones no son patológicas, sino adaptativas, y podrían ser necesarias para mantener un embarazo saludable.

Resumen: El embarazo induce cambios fisiológicos que modifican el microbioma de forma beneficiosa para la gestación.



62. ZEFFA AC ET AL., 2025, Q1

Tema: Efectos de la periodontitis sobre la fertilidad y la descendencia en ratas macho.

Contenido: Estudio en ratas Wistar mostró que la periodontitis inducida provocó inflamación testicular, disminución de testosterona, alteraciones espermáticas y reducción del éxito reproductivo. La descendencia mostró malformaciones y bajo desarrollo intrauterino.

Resumen: La inflamación periodontal afecta negativamente la fertilidad masculina y el desarrollo embrionario en modelos animales.

63. ZHANG KK ET AL., 2023, Q4

Tema: Relación entre *P. gingivalis* y enfermedades no orales.

Contenido: Revisión sobre el papel sistémico de *Porphyromonas gingivalis*, implicada en patologías como cáncer, diabetes, artritis, Alzheimer, enfermedad inflamatoria intestinal y partos prematuros. El artículo sugiere su potencial como biomarcador diagnóstico o diana terapéutica.

Resumen: *P. gingivalis* podría participar en enfermedades sistémicas, incluyendo prematuridad, como patógeno clave más allá de la cavidad oral.

64. ZHANG F ET AL., 2022, Q2

Tema: Alivio del dolor y seguridad de terapia transicional en embarazadas con pulpitis.

Contenido: Estudio en 62 embarazadas con pulpitis/apicitis tratadas con terapia transicional (TT) o sin tratamiento. TT redujo significativamente el dolor sin efectos adversos sobre peso, talla o edad gestacional. Los resultados antibacterianos fueron comparables a la endodoncia tradicional.

Resumen: La terapia transicional alivia eficazmente el dolor dental en embarazadas sin comprometer los resultados obstétricos.

65. ZHANG H & LIN X, 2024, Q2

Tema: Relación entre SOP y enfermedad periodontal.

Contenido: Revisión narrativa sobre factores compartidos entre SOP y periodontitis: disbiosis, estrés oxidativo, inflamación, mediadores hormonales y ferroptosis. Destaca la necesidad de estudios que aclaren los mecanismos y favorezcan tratamientos multidisciplinarios.

Resumen: SOP y periodontitis comparten mecanismos inflamatorios y hormonales, lo que refuerza un enfoque clínico combinado.


66. ZHAO M ET AL., 2025, Q2

Tema: Análisis bibliométrico de enfermedad periodontal y embarazo.

Contenido: Estudio de 932 artículos desde 2000 a 2023. EE. UU. y Brasil lideran las publicaciones. Offenbacher es el autor más citado. Las palabras clave más relevantes incluyen "oral microbiota" y "adverse pregnancy outcomes". Se resalta la necesidad de más colaboración internacional y foco en mecanismos.

Resumen: La investigación sobre periodontitis y embarazo ha crecido desde 2019, centrada en microbiota, riesgos y prevención.

04

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Preguntas y
Respuestas



Preguntas y respuestas

1. ¿DE VERDAD LAS ENCÍAS PUEDEN INFLUIR EN EL EMBARAZO?

Sí. Cuando las encías están inflamadas de forma crónica, el cuerpo libera sustancias que pueden provocar contracciones, alterar la placenta y aumentar el riesgo de parto prematuro o bajo peso al nacer. La boca y el útero están más conectados de lo que parece.

2. ¿QUÉ ES LA "GINGIVITIS DEL EMBARAZO"?

Es la inflamación de las encías que aparece por los cambios hormonales del embarazo. Aunque te cepilles igual que antes, las encías se enrojecen y sangran con más facilidad. Es común, pero no es inocente: hay que tratarla.

3. ¿UNA BOCA ENFERMA AUMENTA EL RIESGO DE PARTO PREMATURO?

Los estudios epidemiológicos y varios meta-análisis muestran asociación entre periodontitis y parto pretérmino o bajo peso al nacer. Es uno de los factores de riesgo asociados, no la causa única. El beneficio del tratamiento periodontal sobre los desenlaces obstétricos es modesto y no siempre consistente entre estudios, pero la coherencia biológica y el escaso riesgo del tratamiento hacen que sea sensato actuar.

4. ¿Y DE PREECLAMPSIA?

Hay un estudio reciente (2024) que relaciona algunas interleuquinas de la inflamación gingival con las implicadas en la preeclampsia. No podemos decir que con una buena higiene bucal vayamos a evitar una preeclampsia, ojalá fuera tan sencillo, pero sí parece razonable considerarla uno de los factores de riesgo proinflamatorios modificables que merece la pena controlar.

5. ¿PUEDEN LAS BACTERIAS DE LA BOCA LLEGAR AL BEBÉ?

Algunos estudios han detectado bacterias de origen oral en placentas y en líquido amniótico de mujeres con periodontitis, y se han asociado a complicaciones obstétricas. La existencia de un "microbioma placentario" propiamente dicho está debatida, pero lo que sí está documentado es que durante una periodontitis

activa hay episodios repetidos de bacteriemia (paso de bacterias a la sangre), que es la vía más plausible para que lleguen a otros tejidos.

6. ¿ES SEGURO TRATARSE LAS ENCÍAS ESTANDO EMBARAZADA?

Sí, es seguro y recomendable. El segundo trimestre es el mejor momento para hacer una limpieza profesional. Tratar la inflamación reduce riesgos y no perjudica al bebé.

7. ¿Y LAS RADIOGRAFÍAS DENTALES DURANTE EL EMBARAZO?

Se evitan si no son imprescindibles. Si fueran necesarias, se hacen con protección abdominal y dosis muy bajas, perfectamente seguras. Lo prudente es planificar las revisiones antes del embarazo si es posible.

8. ¿LA ANESTESIA LOCAL DEL DENTISTA ES SEGURA PARA EL BEBÉ?

Las anestésicos dentales habituales son seguros durante el embarazo. Lo importante es informar al dentista del embarazo para elegir bien el tipo y la dosis.

9. ¿PUEDEN LAS BACTERIAS DE LA BOCA LLEGAR A LA FLORA VAGINAL?

Hay estudios que han detectado bacterias de origen oral en muestras vaginales y las han relacionado con alteraciones de la flora. Es un hallazgo intrigante, con literatura todavía limitada, así que conviene tomarlo como una pista que merece seguirse investigando, no como una certeza.

10. ¿Y SI TENGO PROBLEMAS PARA QUEDARME EMBARAZADA? ¿TIENE QUE VER LA BOCA?

Puede tener que ver, pero es un terreno aún en estudio. La inflamación crónica puede influir en la respuesta del cuerpo a los tratamientos de fertilidad, y algunos centros incluyen ya una revisión bucal antes de comenzar técnicas de reproducción asistida. La evidencia firme es limitada; cuidar la boca antes de buscar embarazo no garantiza nada, pero sí elimina un posible factor de inflamación.



11. ¿INFLUYE LA SALUD DE LA BOCA DEL HOMBRE EN LA FERTILIDAD?

La mayor parte de la evidencia procede de estudios en animales y de algún estudio observacional en humanos. Apunta en una dirección coherente con lo que vemos en mujeres, pero hoy por hoy no hay datos suficientes para afirmar que tratar las encías mejore la fertilidad masculina.

12. ¿QUÉ PASA EN LA MENOPAUSIA?

Las hormonas cambian, pero al contrario que en el embarazo: ahora bajan los estrógenos y aparece un efecto atrófico. Las mucosas se retraen, dejan expuestas zonas de los dientes que antes estaban protegidas y aumenta la sensibilidad, la sequedad y el riesgo de periodontitis. Cuidar la boca en esta etapa es especialmente rentable, porque los cambios no son inflamatorios sino de pérdida de tejido.

13. ¿Y EL SÍNDROME DE OVARIO POLIQUÍSTICO (SOP)?

Las mujeres con SOP tienen más periodontitis. Comparten un terreno inflamatorio y metabólico (resistencia a la insulina, sobrepeso) que afecta tanto a los ovarios como a las encías.

14. ¿LOS ANTICONCEPTIVOS HORMONALES ME AFECTAN A LAS ENCÍAS?

Pueden. Las hormonas influyen en la respuesta inflamatoria de las encías; con anticonceptivos puede aparecer más sangrado o inflamación. Avisar al dentista permite ajustar el seguimiento.

15. ¿Y LOS TRATAMIENTOS HORMONALES POR REPRODUCCIÓN ASISTIDA?

Pueden aumentar la inflamación gingival. No es un motivo para no hacerlos, pero sí para reforzar la higiene y las revisiones durante el tratamiento.

16. ¿QUÉ HAGO SI ME SANGRAN LAS ENCÍAS DURANTE EL EMBARAZO?

No lo ignores. Refuerza el cepillado suave dos veces al día, usa seda o cepillos interdentes y pide cita con el dentista. Sangrar al cepillarse no es normal, ni siquiera estando embarazada.

17. ¿SIRVEN LOS COLUTORIOS DURANTE EL EMBARAZO?

Algunos sí, pero deben recomendarlos un dentista. Hay colutorios suaves y seguros que ayudan, pero no sustituyen al cepillado ni a la limpieza profesional.

18. ¿QUÉ DIETA FAVORECE A LA BOCA Y AL EMBARAZO A LA VEZ?

La dieta mediterránea: verduras, fruta, pescado, legumbres, frutos secos y aceite de oliva. Aporta vitaminas y minerales clave para las encías y para el desarrollo del bebé.

19. ¿EL TABACO DURANTE EL EMBARAZO SOLO AFECTA AL BEBÉ?

No. Aumenta también el riesgo de periodontitis grave y de complicaciones obstétricas. Dejar de fumar es de las decisiones con más impacto en salud que se pueden tomar en esta etapa.

20. ¿DESPUÉS DEL PARTO LA BOCA VUELVE A ESTAR COMO ANTES?

Depende de cómo estuviera antes y durante el embarazo. Si hubo gingivitis o periodontitis, suele quedar inflamación residual que conviene tratar. Una revisión postparto es muy recomendable.

21. ¿LAS BACTERIAS DE LA BOCA DE LA MADRE PUEDEN PASAR AL BEBÉ?

Sí. La caries y la periodontitis tienen un componente bacteriano que se transmite. Compartir cubiertos o limpiar el chupete con la boca aumenta el contagio. Cuidar tu boca es proteger la suya.

22. ¿TENGO MÁS RIESGO DE CARIES DURANTE EL EMBARAZO?

Sí. Vómitos, antojos de dulce, picoteo frecuente y menor flujo salival favorecen la caries. Mantener una buena higiene y reducir el azúcar entre horas es clave.



23. ¿Y SI TENGO NÁUSEAS Y VOMITO A MENUDO? ¿CÓMO CUIDO LOS DIENTES?

Importante no cepillarse inmediatamente después de vomitar, porque el esmalte está reblandecido. Mejor enjuagar con agua o agua con bicarbonato y esperar unos minutos antes del cepillado.

24. ¿LA PREECLAMPSIA SE PREVIENE CUIDANDO LA BOCA?

No es la única medida ni la principal, pero reducir la inflamación oral disminuye uno de los factores de riesgo. Junto con la dieta, el control de la tensión y el seguimiento obstétrico, suma.

25. ¿DEBERÍA EL GINECÓLOGO PREGUNTAR POR MI SALUD BUCAL?

Sí. Igual que pregunta por el tabaco, el alcohol o las vacunas, debería preguntar por sangrado de encías o aftas. Una pregunta sencilla puede ahorrar complicaciones serias.

26. ¿Y DERIVAR AL DENTISTA FORMA PARTE DEL CONTROL DEL EMBARAZO?

Debería. Lo ideal es una revisión bucal antes de buscar embarazo, otra al inicio de la gestación y una postparto. Es un protocolo barato, sencillo y muy rentable.

27. ¿INFLUYE LA SALUD BUCAL EN EL RIESGO DE ABORTO?

Algunos estudios han descrito asociación entre periodontitis grave y abortos tardíos, con mecanismos biológicamente plausibles (inflamación crónica, bacteriemia). Como en muchos temas relacionados con el embarazo, hablamos de un factor de riesgo más, no de una causa única ni demostrada de aborto.

28. ¿QUÉ SEÑALES DE ALARMA EN LA BOCA DEBO CONSULTAR DURANTE EL EMBARAZO?

Sangrado mantenido al cepillarse, encías muy hinchadas, dolor, abscesos, mal aliento persistente, dientes que se mueven o llagas que no curan. Cuanto antes se valore, mejor.

29. ¿QUÉ MENSAJE LE DARÍAS A UNA MUJER QUE PLANEA QUEDARSE EMBARAZADA?

Que incluya la revisión dental en su preparación, igual que la analítica o el ácido fólico. Una boca sana antes del embarazo evita problemas durante y después.

30. ¿Y UN MENSAJE FINAL PARA TODAS LAS MUJERES?

Que cuidar la boca no es solo estética. Es proteger su salud reproductiva, su embarazo, su menopausia y, de paso, la salud futura de sus hijos.



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