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(ii) Are This systematic review has filtered all the data to review a few essential aspects of the role of vitamin D in maintaining oral physiology. Major periodontal diseases are multiplex and involve diverse causes [87,88]. The purpose of this Meta-analysis is twofold: (1) compare vitamin D levels in individuals with or without periodontitis; (2) assess the effects of vitamin D supplementation during scaling and root planing (SRP) on periodontal clinical This systematic review has filtered all the data to review a few essential aspects of the role of vitamin D in maintaining oral physiology. synthesizing the available evidence from relevant studies and examine effect of different dosage of vitamin D on periodontal health outcomes, to inform and provide evidence Evidence suggests that low serum vitamin D is associated with increased severity of periodontitis, a chronic inflammatory condition characterised by destruction of the the importance of maintaining vitamin D sufficiency in supporting periodontal health. This review aims to first examine the biological mechanisms by which vitamin D might Objectives. Periodontitis is accompanied by attachment loss and alveolar bone resorption. Periodontal health is a crucial indicator of overall health, the well-being of an individual, and the quality of life []. World Health Organization (WHO) described oral health as the ambiance of the buccal cavity, teeth, and orofacial edifices that empower people to execute fundamental activities like ingesting and swallowing food, maintaining respiration, and One of the first studies which implicated vitamin D sufficiency as a protective factor against progression of periodontal disease, was the Dental Longitudinal study, which examined total vitamin D intake and periodontal health in a cohort of well-characterised older men This was a repeated-measures cross-sectional study, which showed that The evidence emphasises the importance of maintaining vitamin D sufficiency in supporting periodontal health. Vitamin D preserves bone health and metabolic activities that promote the health of soft tissues [30,89,90] There are differences in vitamin D levels between periodontitis and healthy individuals, but the effect of vitamin D on periodontitis is controversial. Keywords: cholecalciferol; gum disease; mouth cavity; nutrition; oral None of the observational longitudinal studies found that periodontal disease progression could be attributed to lower vitamin D levels. This review aims to first examine the biological mechanisms by which vitamin D might influence the pathogenesis of periodontal disease and second, discuss the clinical evi-dence which implicate the role of vitamin D in periodontal disease due to the prevalence of its deficiency [78,]. No meta-analysis was performed due to high variability across studies Keywords Periodontitis · Vitamin D2 · Vitamin D3 · Total vitamin D · Attachment loss Introduction Periodontitis is a prevalent disease among adults and aects-% of the general adult population worldwide [Severe periodontitis is induced by periodontal pathogens and results in periodontium destruction, alveolar bone Vitamin D (VD) deficiency was closely associated with bone loss or osteoporosis. The function of vitamin D in conserving overall mouth cavity well-being [55,75]. Vitamin D has a linear relationship with The main aspects of the association evaluated were a) the association of(OH)D and 1,(OH)2D3 with periodontal disease severity, periodontal disease progression and Vitamin D affects the pathogenesis of periodontal diseases (PD) via immunomodulation, increases bone mineral density (BMD), reduces bone resorption, and is important in Introduction and background. No interventional studies that evaluated the use of vitamin D supplementation as a solely adjuvant to periodontal treatment was found. Vitamin D has a linear relationship with periodontal health; however, the evidence is insufficient, and further studies must be done. The To evaluate the existing evidence supporting or refuting the following questions: (i) Do patients with lower vitamin D levels have higher risk for periodontal disease?