

## GENERAL SCIENTIFIC REVIEWS

Year	Name of Study	Publication	Author(s)	Institution(s)	Conclusions
2021	Dental Services and Health Outcomes in the New York State Medicaid Program	<i>Journal of Dental Research</i> 2021, Vol. 100(9) 928–934	Lamster IB, Malloy KP, DiMura PM, Cheng B, Wagner VL, Matson J, Proj A, Xi Y, Abel SN, Alfano MC	Stony Brook University; Columbia University; New York State Department of Health; Columbia University; University at Buffalo; New York University	Accessing preventive dental care by a large cohort of publicly insured individuals in New York State was associated with better health care outcomes, most notably for the rates and costs of inpatient admission. Each additional preventive dental care visit was associated with a 3% reduction in the relative risk for Emergency Department and 9% reduction for Inpatient Costs. Costs also decreased for total health care (–\$235.64 [95% CI, –299.95 to –171.33]) and Inpatient Care (–\$181.39 [95% CI, –208.73 to –154.05]).
2021	Oral Health in America: Advances and Challenges. NIDCR Report 2021.	<i>Oral Health in America - April 2022 Bulletin   National Institute of Dental and Craniofacial Research (nih.gov)</i>	National Institute of Dental and Craniofacial Research (NIDCR)	National Institute of Dental and Craniofacial Research (NIDCR)	Moderate to Severe Periodontitis is more prevalent in persons with Diabetes (49% than persons without (33%). [p.3A-4, Table 1] U.S. insurers have taken the initiative to implement cost-saving dental benefits for patients with chronic diseases, such as type 2 diabetes, coronary artery disease, and cardiovascular disease. When patients received nonsurgical periodontal treatment versus no treatment, there was a significant decrease in their C-reactive protein and leukocyte levels, which are blood serum markers for inflammation. [p. 3A-17] See Fact sheet for pages in sections 3A and 3B for review related to the impact of oral health on treatment for cancer, diabetes, heart disease, stroke, emphysema, dementia, Parkinson’s Disease and hospital acquired pneumonia.
2021	Burden of chronic diseases associated with periodontal diseases: a retrospective cohort study using UK primary care data	<i>BMJ Open</i> 2021;11:e048296	Zemedikun DT, Chandan JS, Raindi D	University of Birmingham; Birmingham Dental Hospital; NHS Foundation Trust; Newcastle University; University of Oxford;	In this cohort, periodontal diseases appeared to be associated with an increased risk of developing cardiovascular, cardiometabolic, autoimmune diseases and mental ill health. Periodontal diseases are very common; therefore, an increased risk of other chronic diseases represent a substantial public health burden
2020	Periodontal Inflammation Primes the Systemic Innate Immune Response	<i>Journal of Dental Research</i> . 2021;100(3):318-325	Fine N, Chadwick JW, Sun C, Parbhakar KK, Khoury N, Barbour A, Goldberg M, Tenenbaum HC, Glogauer M	University of Toronto	The presence of periodontal diseases (PDs) often strongly correlates with other severe chronic inflammatory conditions, including cardiovascular disease, diabetes, and arthritis. Periodontal tissue inflammation has systemic effects that predispose toward an exacerbated innate immune response, suggesting larger implications of PD beyond oral health and revealing potential new approaches for treating systemic inflammatory diseases that interact with PD.
2014	Impact of Periodontal Therapy on General Health: Evidence from Insurance Data for Five Systemic Conditions	<i>American Journal of Preventive Medicine</i> , 47(2):166-174.	Jeffcoat MK, Jeffcoat RL, Gladkowski PA, Bramson JB, Blum JJ	United Concordia Dental	Treating gum disease reduces annual medical costs for: <ul style="list-style-type: none"> <li>• Diabetes: \$2,840 (reduction of 40.2%)</li> <li>• Stroke: \$5,681 (reduction of 40.9%)</li> <li>• Heart Disease: \$1,090 (reduction of 10.7%)</li> </ul> Treating gum disease reduces hospital admissions for: <ul style="list-style-type: none"> <li>• Diabetes: reduction of 39.4%</li> <li>• Stroke: reduction of 21.2%</li> <li>• Heart Disease: reduction of 28.6%</li> </ul>

2014	Integrating Oral and General Health Care	<i>The New England Journal of Medicine</i> , 371(24), 2247-2248	Donoff, D., McDonough, J., & Riedy, C.	Harvard School of Dental Medicine; Harvard School of Public Health	When patients are periodontally healthy, benefits include improved general health and quality of life, reduced medical costs, fewer hospital visits, fewer physician visits, reduced morbidity, reduced mortality.
2013	Medical Dental Integration Study			United Healthcare Optum	Individuals with certain chronic conditions who received appropriate dental care, including preventive services and the treatment of gum disease, had net medical and dental claims that were on average \$1,038 lower per year than claims for chronically ill people who did not receive that type of oral care. Among diabetics, the average annual net medical and dentals claims were \$1,279 lower per person for individuals who received treatment for gum disease compared to people who did not.
2012	Periodontitis and Systemic Diseases: A Literature Review	<i>Journal of Indian Society of Periodontology</i> , 16(4), 487-491	Arigbade, A., Babatope, B., & Bamidele, M.	University of Port Harcourt, Nigeria; University of Ibadan, Nigeria	Medical specialists must recognize the emerging and increasing significance of periodontal disease in comprehensive health care.  Dentists must improve their knowledge and clinical exposure of relevant systemic conditions (T2DM, CHD, CVD, etc.) in order to interact and relate meaningfully with their medical colleagues.
2010	Oral Microbiota and Cancer	<i>Journal of Oral Microbiology</i> , 2(2010)	Meurman JH	University of Helsinki	Poor oral health associates statistically with prevalence of many types of cancer, such as pancreatic and gastrointestinal cancer. Furthermore, several oral micro-organisms are capable of converting alcohol to carcinogenic acetaldehyde which also may partly explain the known association between heavy drinking, smoking, poor oral health and the prevalence of oral and upper gastrointestinal cancer.
2010	Dentists' Attitudes Toward Chairside Screening for Medical Conditions	<i>Journal of the American Dental Association</i> , 141(1), 52-62	Greenberg, B., Glick, M., Frantsve-Hawley, J., & Kantor, M.	American Dental Association	Effective disease prevention is needed and predicated on an integrated approach involving health care professionals across multiple disciplines.
2002	Periodontal Disease and Preterm Delivery of Low-Birthweight Infants	<i>J Can Dent Assoc</i> . 2002 Mar; 68(3):165-9	McGaw T	University of Alberta	Preterm delivery of low-birth-weight infants (PLBW) remains a significant public health issue and a leading cause of neonatal death and long-term neurodevelopmental disturbances and health problems. Almost 20% of the pre-term, low-weight births occurring each year might be attributable to periodontal disease.
2002	Carranza's Clinical Periodontology	<i>Carranza's Clinical Periodontology</i> , 9	Newman, M., Takei, H., & Carranza, F.	W.B. Saunders Company	Periodontal disease is an inflammatory disease of all the supporting tissues of the teeth caused by specific or groups of specific microorganisms, resulting in progressive destruction of the gingival tissue, periodontal ligament, and alveolar bone with pocket formation, recession, or both.
2000	Oral Health in America: A Report of the Surgeon General - Executive Summary			Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health	Oral health is integral to overall health and means more healthy teeth.