



Periodontal and Cardiovascular Disease

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CARDIAC SURGEON

SEMUMS

1402



AHA's My Life Check—Life's Essential 8. Source: Reprinted from Lloyd-Jones et al.¹ Copyright © 2023, American Heart Association, Inc.

Heart Disease and Stroke Statistics—2023 Update: A Report From the American Heart Association



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2020 Mar;47(3):268-288.

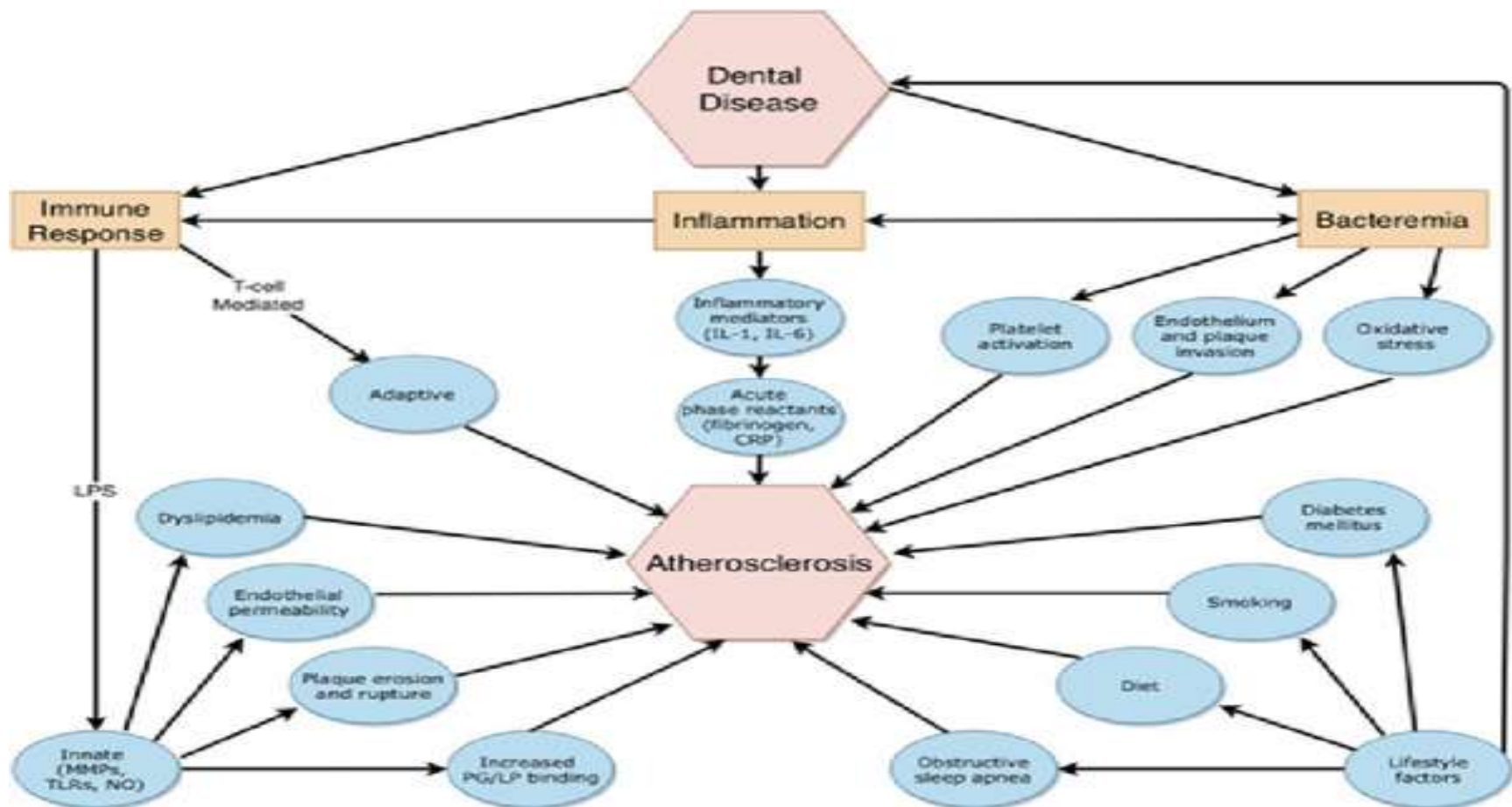
doi: 10.1111/jcpe.13189. Epub 2020 Feb 3.

Periodontitis and cardiovascular diseases: Consensus report

1- CVD is responsible for (45% of deaths), being ischaemic heart disease, stroke, hypertension (leading to heart failure).

2- Periodontitis is a chronic non-communicable disease (NCD)





Review Am J Prev Cardiol

. 2021 Apr 5;7:100179. doi: 10.1016/j.ajpc.2021.100179. eCollection 2021 Sep.

Oral health and atherosclerotic cardiovascular disease: A review

-Effects of PD on systemic inflammation, platelet and endothelial function, and lipoproteins.

-Poor oral health is associated with atherosclerotic cardiovascular disease

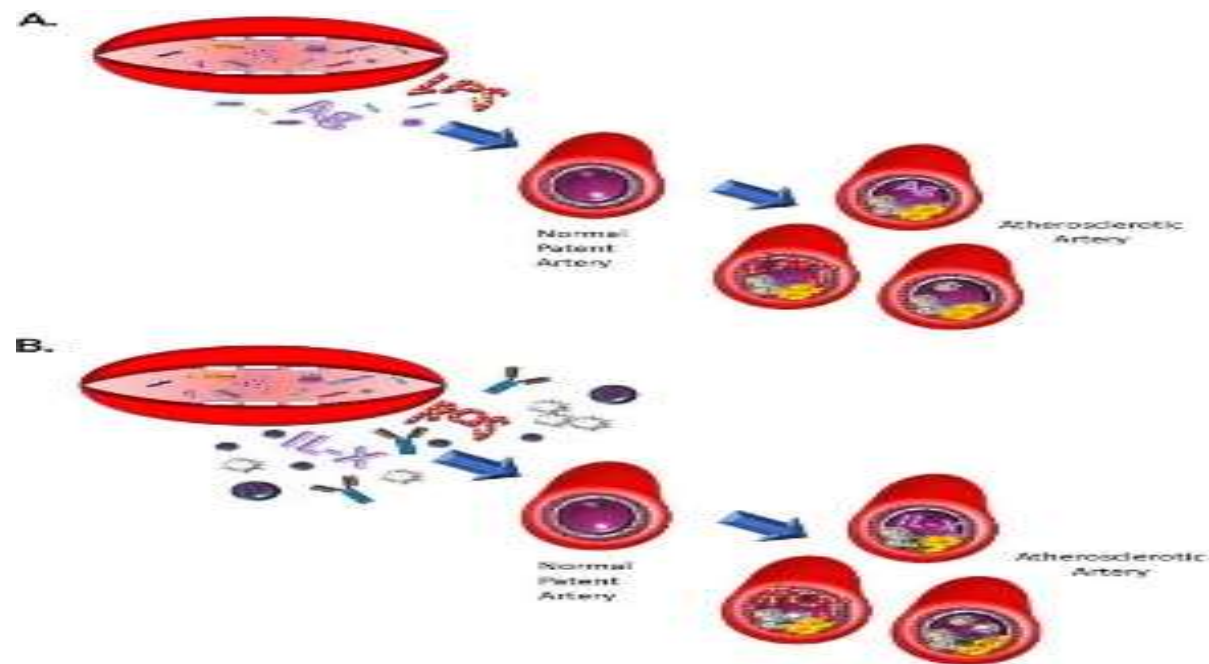
-PD affects 47% of adults aged 30 years and older and increases with age, occurring in 70% of adults 65 years and older. PD is more common in men than women (56.4% vs 38.4%)

Dental Infections and Cardiovascular Diseases: A Review

- Burden of endotoxin (lipopolysaccharide) and inflammatory cytokines (especially TxA_2 , $\text{IL-1}\beta$, PGE_2 , and $\text{TNF-}\alpha$)
- Initiate and exacerbate atherogenesis' and thromboembolic events.
 - Chlamydia pneumoniae*, periodontal pathogens cause atherosclerosis in experimental animals.
- Higher concentrations of (LDL) and triglycerides and lower concentrations of (HDL).
- Elevated (CRP) and IgA antibodies.

2022 Feb;72(1):37-51.

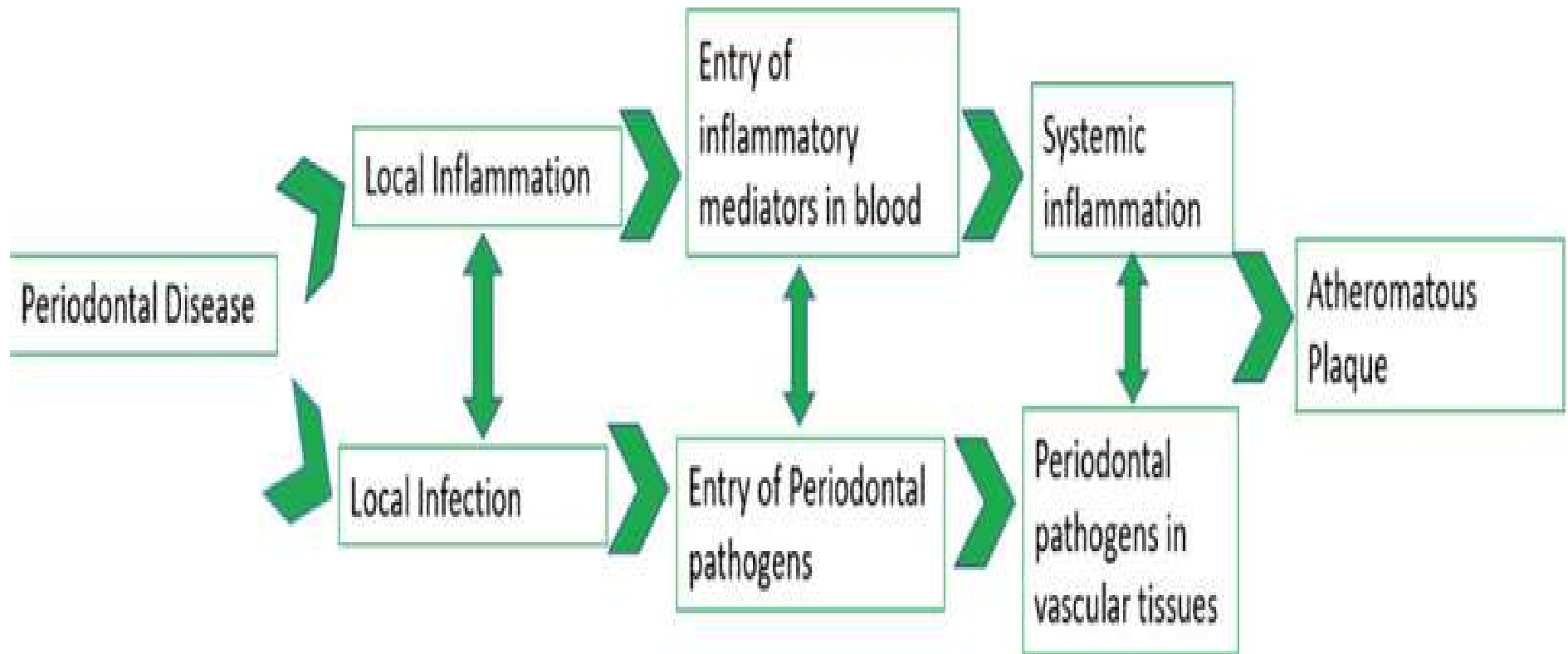
Is There a Causal Link Between Periodontitis and Cardiovascular Disease? A Concise Review of Recent Findings



2023 Feb 2. doi: [10.33393/dti.2023.2510](https://doi.org/10.33393/dti.2023.2510)

Association between cardiovascular diseases and periodontal disease: more than what meets the eye

-PD is a risk factor that can trigger the formation, maturation, and instability of atheroma in the arteries.



2021 Mar;48(3):348-356.

doi: 10.1111/jcpe.13418. Epub 2021 Jan 19.

Periodontitis is associated with cardiovascular diseases: A 13-year study

Results: The prevalence of no/mild, moderate and severe periodontitis in the study participants was 11.7%, 52.7% and 35.6%, respectively. During the 13-year follow-up, CVD events occurred in 110 (5.9%) participants, with 82 (4.4%) from CHD and 28 (1.5%) from stroke.

- Severe periodontitis compared with mild one ,**HR of 4.53** (95% confidence intervals: 1.08-19.02).

-Conclusions: This study demonstrates that severe periodontitis is associated with an increased incidence of CHD, independent of established cardiovascular risk factors.

Periodontal Disease is Associated With Elevated Prediabetes Prevalence and Glucose Levels Among Non-Diabetic Adults. Results From Oral Infections, Glucose Intolerance and Insulin Resistance Study
Circulation 2023

- Included n=1071 non-diabetic participants from the Oral Infections, Glucose Intolerance and Insulin Resistance Study. Baseline enrollment occurred in two waves:
- Prediabetes was defined as fasting glucose between 100-125 mg/dL or HbA1c between 5.7-6.4% per American Diabetes Association guidelines.
- **Conclusion:** A cumulative measure of periodontitis, was cross-sectionally associated with increased prediabetes prevalence, glucose and HbA1c.

Dental information for cardiac surgery

- Heart valves surgery.
- Endocarditis
- Warfarin and anticoagulation
- Hypertention
- If any treatment is required it should be carried out at **least 8 weeks** before your cardiac surgery.
- Coronary artery bypass grafts
- Congenital heart disease
- Pace maker

Review Article:

Dental considerations in cardiovascular patients: A practical perspective

Treatment objectives :

- 1) Patients with cardiovascular diseases is to deal with all the identified risk factors involved.
- 2) Pre-medication : anxiety , reduce stress.
- 3) Early morning appointments .
- 4) Allowed comfortable position in a dental chair.
- 5) Time down to a minimum.
- 6) Current medications .

Dental management of angina pectoris patients:

- 1- Premedication with anxiolytics or prophylactic nitroglycerin,
- 2- Nitrous oxide-oxygen sedation,
- 3- Anesthetic with epinephrine (1:1,00,000) with aspiration
- 4- Angina pain is often felt in the mandible
- 5- NTG spray
- 6- Oxygen is administered 4–6 lit/min
- 7- Cardiac arrest
- 8- In patients with pacemakers, electrocautery and the use of cavitron should be avoided
- 9- Within 6 months, if any urgent invasive treatment is required such as Extractions/RCT, with 6 months of infarction, the treatment should be delivered in a hospital setting

Dental management of dysrhythmia patients:

- 1- Arrhythmia during a dental appointment
- 2-continuous ECG monitoring
- 3- History, symptoms, and palpation
- 4- Carefully evaluated by their physician and adequate medication (Beta-blockers)
- 5- Even a brief loss of consciousness ,referred to medical evaluation.
- 6- Collapses in the chair, cardiac arrest should be suspected and emergency medical services

Dental treatment of patients on anticoagulant therapy :

- 1- Local hemostatic measures to control bleeding
- 2- Atraumatic surgical technique,
- 3- Adequate wound closure,
- 4- Pressure application, and
- 5- Topical clotting agents.
- 6- Oral rinsing with tranexamic acid
- 7- The indication for anticoagulation should be known
- 8- Mechanical valve prostheses
- 9- AF
- 10- warfarin, (INR) check 72 h prior to surgery. There is no need to check the INR for non-invasive dental procedures.

ORIGINAL ARTICLE : J Clin Periodontol. 2020;47:268–288


Periodontitis and cardiovascular diseases: Consensus report

1-In patients undergoing antiplatelet therapy:

Thus, current evidence does not support discontinuation of antiplatelet therapy before dental procedures, irrespective of the type of therapy employed (single or dual antiplatelet therapy) or the type of procedure performed (single, multiple tooth extractions, non-surgical and surgical periodontal therapy and dental implant procedures)

2-In patients taking oral anticoagulant therapy (warfarin) and undergoing dental extraction, minor dental procedures and dental implant placement do not seem to increase the risk of bleeding compared to patients who discontinue oral anticoagulant therapy.

Dental Considerations for Cardiac Surgery

- Many patients requiring cardiac surgery possess poor oral health**
 - Decayed teeth, untreated dental abscesses, and periodontitis.**
 - Catastrophic consequences if it occurs during or soon after certain cardiac procedures.**
 - it is suggested that patients who undergo elective cardiac surgery should be screened preoperatively to ensure that any oral infection is diagnosed and definitively treated**
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Tooth extraction prior to cardiac surgery may increase risk of adverse outcomes

Date:

February 27, 2014

Source:

Society of Thoracic Surgeons

Summary: Removing an infected tooth prior to cardiac surgery may increase the risk of major adverse outcomes, including risk of death prior to surgery, even though the practice is relatively routine. This research points to a significant departure from current understanding, guideline and practice, and the authors note that further research is required before recommendations and practice are changed.

The median time from dental extraction to cardiac surgery was 7 days (average 35 days).

