



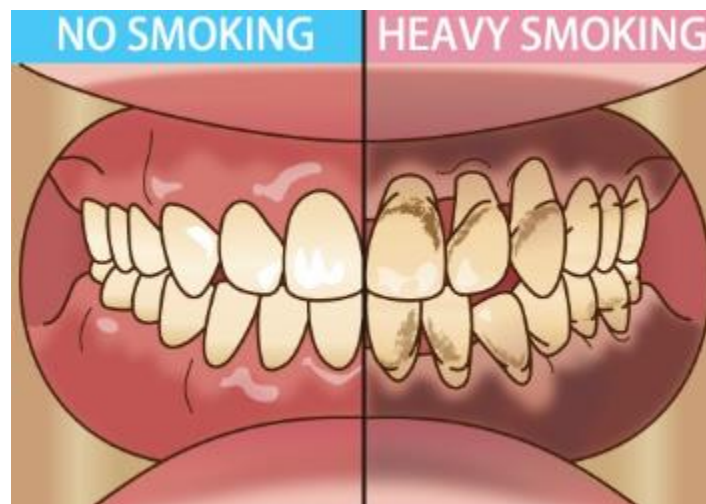
## SMOKING AND PERIODONTIUM

Cigarette smoking represents a major preventable cause of human disease. Smokers have significantly elevated risks of all-cause mortality and developing a variety of pathological conditions.

A direct causal relationship between smoking exposure and the prevalence and the severity of periodontal disease has been firmly established.

Although the direct cause for periodontitis is oral bacterial infection, smoking is arguably the strongest behavioral risk factor for the incidence and progression of periodontitis.

Smoking has a deleterious effect on all the aspects of periodontium. Smokers have been shown to respond less well to nonsurgical as well as surgical therapy than nonsmokers.



### Impact of Smoking on Periodontal Diseases:

#### 1. Gingivitis:

- Decreased gingival inflammation & bleeding on probing

#### 2. Periodontitis:

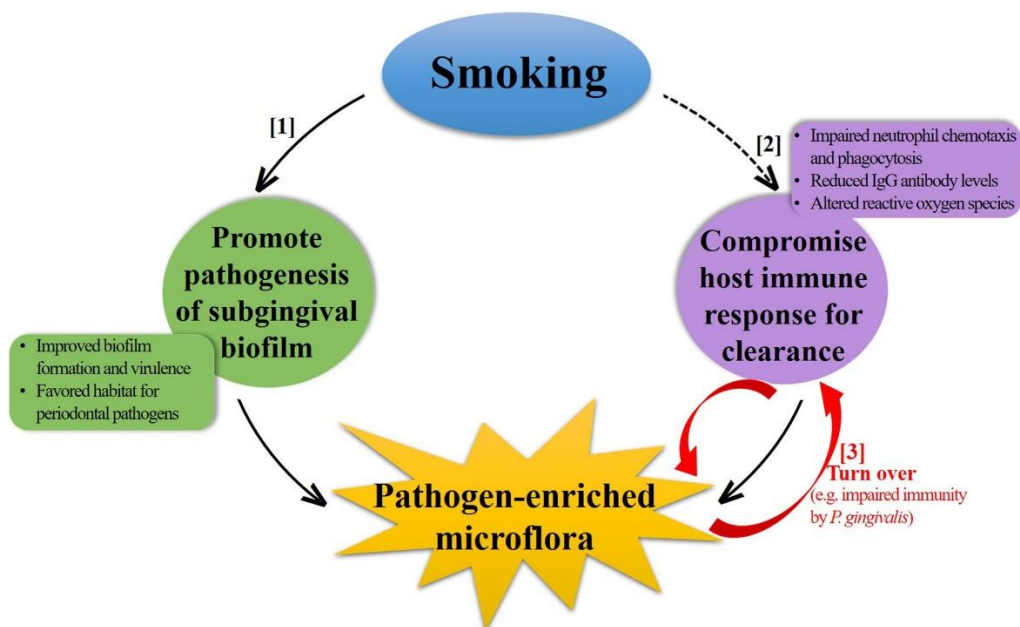
- Increased prevalence & severity of periodontal destruction



- Increased pocket depth, clinical attachment loss & bone loss
- Increased rate of Periodontal destruction
- Increased prevalence of severe periodontitis
- Increased tooth loss
- Increased prevalence with increase in number of cigarettes smoked per day
- Decreased prevalence & severity of periodontal disease with smoking cessation
- There is increased need for re-treatment in smokers
- There is increased production of inflammatory mediators
- Increased levels of *B. forsythus*, *P. gingivalis*, *Actinomycetemcomitans* and other microbes

### Effect of Smoking on Immunology:

- Altered neutrophil chemotaxis, phagocytosis
- Increased tumor necrosis factor – alpha (TNF- $\alpha$ ), prostaglandin E<sub>2</sub> (PGE<sub>2</sub>)
- Reduced Immunoglobulin G2 (IgG2)
- Nicotine adversely affects fibroblast function. It suppresses osteoblast proliferation
- It stimulates alkaline phosphatase activity





### **Effects of Smoking on Physiology:**

- Clinical signs of Inflammation are less pronounced
- There is alteration in the inflammatory response in smokers
- Decreased gingival blood vessels with increased inflammation
- Decreased GCF flow & bleeding on probing with increased inflammation
- Decreased subgingival temperature
- Increased time needed to recover from LA



### **Effects of Tobacco Smoke on Dental Structures:**

- It produces black/brown stains on the teeth surfaces
- More Calculus formation
- Poor Oral hygiene
- Heavy smokers have grayish discoloration
- Gingival hyperkeratosis
- Keratotic, hyperkeratotic, hyperplastic & dyskeratotic gingival epithelium
- **High proportion of small blood vessels & Low proportion of large blood vessels ----  
Suppression of the inflammatory response**
- **ANUG may be present in a few smokers due to reduced activity of oral leukocytes**
- **Proliferation of anerobic, fusospirochetal microorganisms**



**Calculus on teeth surfaces**



**Black Tartar**



#### **Effects of Smoking on Periodontal tissue healing :**

- Decreased pocket depth reduction after surgery
- Increased deterioration of furcation after surgery
- Decreased gain in clinical attachment level
- Decreased bone fill, Increased Recession
- Increased membrane exposure following GTR (Guided Tissue Regeneration)
- Decreased pocket depth reduction after demineralized freeze dried bone allograft
- Decreased pocket depth reduction and gain in clinical attachment level after open flap debridement
- Recurrent disease (Refractory)



- Increased need for retreatment in smokers
- Increased tooth loss in smokers after surgical therapy
- Increased need for antibiotics

**Effects of Smoking Cessation:**

- ✓ **Gingiva exhibits minimal redness & bleeding while brushing**
- ✓ **Gingiva loses its thick fibrotic appearance & assumes normal anatomy**
- ✓ **Several weeks after smoking cessation, inflammation & bleeding will occur**



**SAY NO TO SMOKING**

**KEEP YOUR TEETH HEALTHY**



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