

## Oral Pathogens and Nonpathogens

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### What is normal flora of our mouth?

The normal flora of our mouth means, the presence of some nutrients, some epithelial debris, and some secretions that makes the oral cavity a favorable place of hospitality for a vast variety of microorganism like bacteria. Our mouth is a host of multiple bacteria like *Streptococci*, *Lactobacilli*, *Staphylococci* and corny bacteria, with an abundant number of anaerobes, most prominent is *Bacteroides*. Oral cavity's normal flora is extremely complex and having more than 200 species of bacteria. There is certain initiator of this which may be genetics, age, sex, stress, nutrition and diet of every individual.

There are some important developmental changes in our body which affects normal flora of our mouth, intestinal tract, and vagina as well, those are, weaning, the eruption of the teeth and the onset and halting of ovarian functions too. The predominant microorganisms of the oral cavity surfaces of the human body are especially in the teeth are, *Streptococci*, *Lactobacilli*. And in mucous membrane are *Streptococci* and lactic acid bacteria.

Another study shows that over 700 bacterial species co-inhabit healthy human oral cavity and present in different locations in the mouth like hard palate, soft palate, teeth, tongue and tonsillar as well.

### How normal flora form and when?

Our oral cavity first becomes colonized by a normal flora immediately after birth through the birth canal. Furthermore, in uterus, the fetus is sterile, but as soon as the mother's water breaks and the birth process starts, exactly that time the colonization of the body surfaces initiate. Also handling and feeding of the newborn baby after birth leads and help to establishment of a stable normal flora on the skin, oral cavity and Gastrointestinal tract in about 48 hours normally.

There are different studies on the number of bacteria which start colonization after birth. Later this count may increase.

Dental biofilm is a foundation of micro-organism specially *Streptococci*, researcher says about 80% of bio film contains *Streptococci*. After one layer colonization starts in the form of multilayering on the surface of tooth which contain proteins and antigens. Not only *Streptococci*, but different types of microorganisms also contribute to build biofilms at various location in the oral cavity.

If individuals practice good oral hygiene, swishing with oral antiseptic mouth rinse, mastication and flossing than this biofilm disturbed very easily, but this is not happened every time especially when you eat liquid or incredibly soft diet.

### Which diseases are associated with oral microbiota?

Presence of biofilms in the oral cavity are especially important to maintain good oral health but at the same time if it exceeds the required volume, will be harmful for oral health and it leads to gingivitis and periodontitis very quickly.

The composition of normal Biofilms Gram-positive anaerobic bacteria like *Streptococcus anginosus* and *A. naeslundii*. Also, in unfavorable and unhygienic conditions can dwell Gram-negative bacteria like *Porphyromonas* spp, *Treponema denticola*, *Campylobacter* and *A. actinomycetemcomitans*.

Studies shown that if dental hygiene is not well maintained than these Gram-negative bacteria can infect other organs in the body. The most common disease is bacterial endocarditis. Furthermore, due to these microorganisms the one may have experience of, bad breath, Root infection and actinomycosis is also come under this heading of biofilm related disease.

Dentists also says that maintaining good oral hygiene is the backbone of prevention of many diseases which above mentioned. Researchers says that sometime complex dental treatments can even carry or transport pathogenic bacteria to the bloodstream, some vital organs like brain, kidneys and lungs, not only this but they found a relation between periodontal disease and respiratory tract. Oral cavity assumes that it is hub of pathogens especially when patients are admitted in the intense care unit, one can get rid of all these pathogens by using regularly rinse the mouth with disinfectants like chlorhexidine and antiseptic solutions.

Not only bacteria but fungal infections also occurs in oral cavity due to fungal biofilm. The most important fungi are *C. albicans*, normally it is present in the mouth but due to unhygienic and unhealthy or we can say poor oral hygienic conditions, this stat multiply very quickly.

Recent studies shown that *P. gingivalis* microorganism can lead serious health issue called Alzheimer’s disease in human.

We cannot ignore the massive damage of teeth in the form of tooth decay and it results from the metabolic activity of microbes that hosted by our teeth. A layer of proteins and carbohydrates forms even after cleaned teeth if your saliva contain these elements. This is ideal place of microorganism to stay and grow on food source and start building a biofilm known as plaque and the leader species is *Streptococcus mutans* as a cariogenic organism.

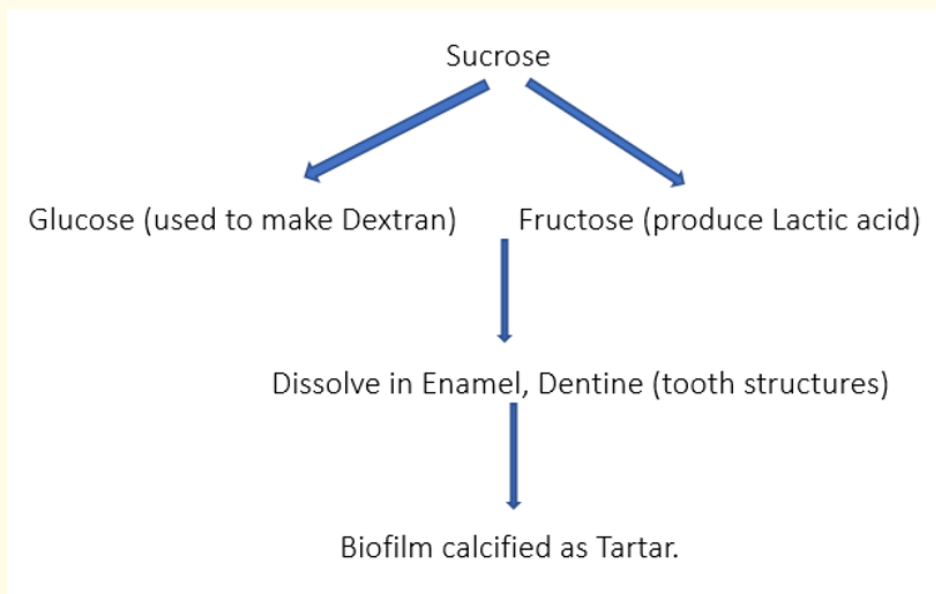


Figure 1

Sequala of tarter and plaque is.....

Inflammation of Gums → Bad breath → Gingivitis → Periodontists → Bone Loss → Shedding of healthy teeth.

*Figure 2*

### Causes of oral disease

- Bad oral hygiene
- Excessive and un-necessary use of toothpick dental floss
- Poor fitted crown, bridge and dentures
- Soft diet, sugary food, sticky food
- Smoking
- Diabetes
- Dry mouth xerostomia
- Family history
- HIV (AIDS)
- Acid refluxes
- Heart burn
- Some medicine
- Dentists always advise to the patient that do visit your dentist after every 6 months, to keep healthy teeth and structures inside and outside your mouth.

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