



DENTAL RISK COMPANY

"Dentistry at work"

DENTAL CALCULUS

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What is Dental Calculus?

Dental calculus is a hardened form of plaque. Plaque is a sticky and choky white layer that naturally sits on the surfaces of teeth. It is easy to scrape plaque using a nail tip, it remains on the nail and has a soft texture. Plaque is removed through the process of brushing. If plaque is not brushed off, it hardens and becomes calculus.

The formation of plaque and calculus has a cycle of four components that must be present in order for calculus to form. The components are:

- Host (Plaque needs a surface to colonize in order for it to grow, in this case, it is mainly teeth)
- Bacteria (plaque is made of bacterial colonies that reproduce)
- Time (The process of calculus formation takes time; it does not happen overnight)
- Diet (The kind of food consumed contributes to the time it takes for plaque to harden and become calculus)

Factors such as salivary flow, over saturation of saliva with calculus forming salts in the oral cavity play a role in how rapid the formation of calculus becomes. Calculus formation may also vary with different people depending on their oral hygiene habits.

It is natural for plaque to develop in the mouth as it also forms part of the healthy normal flora necessary for human nature. It is only a problem when left for too long in the mouth and it turns into calculus.

The accumulation of calculus causes an inflammatory response in the gum, usually showing redness, bleeding upon touch and pain. Calculus releases acid on the surfaces of teeth. This acid destroys the structure of the tooth by making it softer and changing the colour to brown and black.



Role of Dental Calculus

Unfortunately, calculus is the main causative factor for the development of tooth decay and periodontal disease. The bacteria present in calculus irritates the gum and that results in gum infections known as gingivitis, and infections of the supporting structures of teeth known as periodontitis. Both gum diseases and tooth decay are most prevalent dental conditions, yet they are preventable through proper oral hygiene practice.



Management of Calculus

Plaque is removable through brushing and flossing because it is soft. Calculus, which is hard, can only be removed using specialized dental equipment that are sharp and vibrates to break the calculus.

Most times, calculus leaves the tooth appearing to have white patches and stripes. This is a sign that the tooth has lost its natural minerals. To restore the health of the tooth, fluoride treatment is offered and other remineralizing agents are used. Good oral hygiene helps in management and prevention of extensive damage caused by calculus in the mouth. Once calculus is removed, patients are encouraged to maintain good oral hygiene.

Treatment Options

- Fluoride treatments to re-mineralize enamel and prevent tooth decay.
- Antibacterial mouthwash e.g., chlorhexidine.
- Scaling and subgingival root planning to remove calculus.

Good Oral Hygiene Habits

- Flossing daily
- Using a mouthwash at least once a day.
- Brushing twice a day with a toothpaste containing fluoride.
- Limiting sugary and acidic drinks.
- Rinsing with water after eating or drinking sugary substances to regulate the pH in the mouth.
- Regular visits to dental professional at least twice a year.



References

1. Wilkins EM, Wyche CJ, Boyd LD. Clinical practice of the dental hygienist. Philadelphia: Wolters Kluwer; 2017.

