

The Importance of Brushing and Flossing in Prevention of Gingivitis

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The knowledge and understanding of gingivitis and periodontitis are essential for every dental professional. As a student currently pursuing a dental hygiene degree, I am only at the beginning of my journey to learning and building the working knowledge of these diseases. This paper will define the causes of gingivitis, risk factors associated with it, as well as treatment and prevention, such as the importance of toothbrushing and flossing.

According to the article "What Is Gingivitis? Symptoms, Causes, and Treatments" by Crest (2019), "gingivitis is a form of gum disease that happens when plaque, a naturally-occurring sticky film that happens when certain bacteria, builds up on teeth and causes the inflammation of the surrounding gum tissue." The incidence of gingivitis is high: it occurs in 75% of Americans at some point in their lives (Crest, 2019). The article also incorporates a short video that addresses the main factors concerning gingivitis. The video states that bleeding, red or puffy gums are classic signs and symptoms of gingivitis. Nevertheless, some cases of gingivitis are asymptomatic, so patients are unaware that they have it (Crest, 2019). Risk factors that increase the possibility of developing gingivitis are smoking, stress, pregnancy, medications, poor nutrition, and chronic diseases (Crest, 2019). The primary cause of gingivitis is plaque that regularly forms around the teeth (Crest, 2019). According to Crest (2019), if left untreated, gingivitis may progress into periodontitis. Thorough oral hygiene not only prevents gingivitis but can also reverse it (Oral-B). Even though I did not learn any new information from viewing this video, as it has been covered in the class, it gave me a better understanding of how to explain gingivitis to a patient in simple terms. As a future dental professional, I would advise my patient to adhere to a consistent oral hygiene routine in order to prevent gingivitis. It has to consist of toothbrushing twice a day using a soft toothbrush and flossing at least once a day (Oral-B). Regular dental appointments will also prevent gingivitis by removing calculus which facilitates plaque adherence to the teeth (Oral-B).

With all this being said, not everybody is motivated to brush their teeth twice a day. Different life circumstances, mental stress, limited dexterity, laziness, and apathy can come in the way and discourage the patient from regular toothbrushing. These are the tips I can provide to ensure that patients brush their teeth regularly. The first is to use pleasant toothpaste, as it will be in the patient mouth for two minutes. So, if the patient does not like the taste or experiences burning during brushing, most likely he or she will not adhere to the brushing regime. A great way to try a new toothpaste is to buy a travel-size, so the patient does not end up with unpleasant toothpaste for months. Second, do not feel that toothbrushing is a burden. Instead, take the phone or iPad to the bathroom and watch a favorite show during the process to make time pass quicker. Lastly, make sure to change the toothbrush when necessary. The patient may not reach out for the brush if the bristles are faded, worn down, or frayed.

Even though no toothbrush will last forever, good care is needed not to fray bristles with aggressive brushing and eliminate the growth of bacteria. According to Boyd et al. (2021), "there is no ideal timeframe for toothbrush replacement, but a general recommendation is at least every

2-3 months." Furthermore, in the article "Getting the Most out of a Manual Toothbrush" by ColgateProfessional, it is advised to change a brush after a cold or respiratory infection. After every toothbrushing, a toothbrush is cleaned under the water and stored in the open air to allow thorough drying before the following use because a closed, moist environment encourages bacterial growth (Boyd et al., 2021).

Now, let's turn our attention to the differences between manual and electric toothbrushes. The research shows moderate evidence that electric toothbrushes are 10-20% more efficient in plaque removal and about a 10% reduction in gingivitis than manual toothbrushes (Boyd et al., 2021). Nevertheless, The American Dental Association (ADA) says that "manual brushing is a safe and effective method of dental biofilm removal" (ColgateProfessional). According to ColgateProfessional, the pros of choosing a manual toothbrush are price, bristle styles, color, and ergonomic design. The cons are the difficulty to use for people with limited dexterity and children as well as inefficiency in plaque removal if the wrong brushing technique is utilized. Pros of electric toothbrushes stated by ColgateProfessional are efficient and easy brushing for children and people with arthritis and other disabilities and a smaller brush head that can get in hard-to-reach places. The advantage of an electric toothbrush is the build-in mechanism that alerts a patient when too much force is applied, therefore less gingival damage occurs (Boyd et al., 2021). The cons of an electric toothbrush are the price, noise, a need to recharge (ColgateProfessional). These are the tips I would give to patients with electric toothbrushes. The first is to turn on the toothbrush after placing it in the oral cavity to prevent the spatter over the mirror. Second, always make sure that the toothbrush is charged, so it does not stop in the middle of the cycle. Lastly, as the head is moving by itself, the patient can utilize both hands for toothbrushing, which helps to reach the teeth at different angles.

Even with the most diligent toothbrushing technique, it is impossible to clean interproximal spaces without flossing. Nowadays, various types of floss and interdental aids are on the market suited to the needs of a particular consumer. Interestingly, the first floss was invented back in 1815 by American dentist Dr. Levi Spear Parmly, who proposed to use a wax silk thread to clean between the teeth (Denise, 2020). Although not many people like flossing, including myself, it is undeniably the best method of interdental biofilm removal. American Dental Association (2016) states the following:

Flossing is an important oral hygiene practice. Tooth decay and gum disease can develop when plaque is allowed to build up on teeth and along the gum line. Professional cleaning, tooth brushing, and cleaning between teeth (flossing and the use of other tools such as interdental brushes) have been shown to disrupt and remove plaque.

Moreover, it is essential to implement the proper technique to benefit from flossing (American Dental Association, 2016). As mentioned by Boyd et al. (2021), "when dental floss is applied with good technique to a flat or convex proximal tooth surface, biofilm can be removed." The two well-known and approved methods to floss are the spool method and the loop method (Dentalcare). The course on interdental aids by Dentalcare summarizes two methods in the

following way. The piece of floss of approximately 18-24 inches long is utilized for both methods. When implementing the scoop technique, the floss is wrapped around the middle finger of one hand, and a smaller piece is wrapped around the middle finger of the other hand. For the loop technique, the floss is tied at the end to form the circle. The same method of insertion is practiced: seesaw motion in order not to traumatize the interdental papilla. Then, floss is inserted subgingivally in a C-shape and moved in up and down motion on the mesial and distal sides of the teeth. For the next teeth, a new piece of floss is used, until all teeth are cleaned. The circle method is recommended for small children and patients with limited manual dexterity.

Now, I will incorporate this knowledge in two clinician-patient scenarios. The first patient is a 13-year-old teenager who wears orthodontic appliances, brushes once a day, and never flossed before getting braces. Approaching this patient can be challenging because, due to the young age, this patient does not care about long-term health problems that result from poor oral hygiene. Now, braces will only make the brushing process more complicated and time-consuming, thus discouraging the patient even more. First, I would ask the patient why he brushes his teeth only once a day and is it in the morning or night. Depending on the upbringing, the family may never educate him on the importance of brushing and flossing. Defining the reason can help me to find the right motivation for this patient. I would emphasize that braces will cause more plaque build-up and food retention, and brushing twice a day is essential to preserve gum health. As the patient has never flossed before, he may not be compliant now with using a floss threader. So, I would focus on educating the patient on the brushing technique for braces. I would demonstrate Charter's method of brushing using a bilevel toothbrush. Also, I would explain possible outcomes from poor oral hygiene during this period, accompanied by the images of the diseased mouth. Sometimes the visual presentation of the disease is the best motivation for brushing teeth.

The next case is a 28-year-old patient who has localized gingival recession on the buccal surfaces of all posterior teeth. The patient indicates that he or she has been scrubbing teeth using a medium bristle toothbrush their entire life and only flosses when food gets stuck in-between. I believe a lot of people can relate to this situation. Approaching the thirties, people begin to notice changes happening to the body and health due to neglect or the lack of care. It is a great time to adjust and improve self-care, as the individual is conscious about personal well-being. I understand that not all patients will listen and comply, nonetheless, it is the responsibility of the dental hygienist to educate a patient on the consequences of poor oral hygiene. I would inform this patient that gingival recession is irreversible, and the tissue will not grow back. Moreover, without the correct toothbrushing technique using a soft toothbrush and flossing once a day, the gingival health will worsen, and recession will progress. Since the main focus for this patient is the gingival recession, I would concentrate on correcting the toothbrushing technique and choosing the right brush. I would demonstrate and describe the modified Bass technique because it cleans beneath the gingival margin and stimulates the gingiva.

Before beginning to work with patients, it is advisable for the clinician to become familiar with Plaque Index and a disclosing solution. "Simplified Oral Hygiene Index is used to assess

oral cleanliness by estimating the tooth surfaces covered with debris and/or calculus" (Boyd et al., 2021). The following is the explanation of the procedure as defined by Boyd et al. (2021). The specific teeth are picked for the procedure: buccal surfaces of the maxillary molars #3 and #14, and lingual surfaces of the mandibular molars #19 and #30, and facial surfaces of the maxillary right incisor #8 and mandibular left incisor # 24. The score is measured based on the extent of the stain ranging from 0-no debris to 3-covering more than three-quarters of the tooth surface. Then the gathered data is added up and divided by 6. The results are excellent, good, fair, and poor. Based on the area of biofilm retention, the appropriate dental aid is selected for a patient. I paused brushing my quadrant 2 for a week to build up plaque. The clinical worksheet with the gathered data is attached below. After 4 weeks of flossing, the result advanced from fair to good, confirming that regular and diligent hygiene improves the health of the oral cavity.

1. From this assignment, I have learned and improved upon my knowledge of toothbrushing and flossing. I looked back into the history of the first dental floss, differentiated between manual and powered toothbrushing, and tried to implement my knowledge into the practice by simulating patient-clinician scenarios.
2. Even though the majority of the information was not new, I did find this assignment beneficial. Honestly, I think that every assignment is beneficial in its way because it helps me to study and perfect my knowledge on the current subject.
3. I am sure that all my family members use incorrect toothbrushing and flossing methods. A couple of years ago, my sister dislodged the filling while flossing. Unfortunately, because of this incident, she stopped flossing at all. I explained to her that with proper technique it should not happen, and, probably, she pulled on the floss too hard. I hope that my enhanced knowledge will help me persuade my sister to start flossing again, as it is crucial for oral health.
4. I believe that every next assignment helps me to build my confidence. I can tell that throughout the course, as I learned new material, I started to feel more and more comfortable having a conversation with future patients. And after preparing this particular homework, I feel ready to educate on the importance of correct toothbrushing and flossing methods.

Visit 1 DATE: 4/8/2021

3B 1 8F 1 14B 2 18L 1 24L 1 30L 1 Total: 7 ÷ 6 = 1.17

Score 1.17 Fair

Materia Alba present: Yes **No**

Food debris present: Yes **No**

Describe where biofilm is located? Generalized/localized/anterior/posterior, buccal/lingual, interproximals:

Localized biofilm on anterior/posterior teeth on buccal side interproximally and at the cervical third

Visit 1 Observations: Localized biofilm is on the cervical third of molars, but predominantly interproximally on molars and upper and lower incisors due to crowding. The most biofilm is on #14, since it does not have an antagonist the natural self cleansing mechanism is compromised. Gingiva is pink, fits snugly around teeth, near CEJ with recession on #3 and #14, stippled, firm, no bleeding

Circle one: Manual TB **Floss**

Select type of TB technique: _____ Rationale for selecting:

Select type of Floss: Glide Rationale for selecting: Localized biofilm on anterior/posterior teeth predominantly at the interproximal spaces indicates flossing using loop method

Visit 2 DATE: 4/15/2021

3B 1 8F 0 14B 1 18L 1 24L 1 30L 1

Total: 5 ÷ 6 = Score 0.83 **Fair** Improvement from Visit 1? **Yes** No

Is method being used by patient? **Yes** No

Visit 2 Observations: Localized biofilm interproximally on anterior and posterior teeth. Gingiva is pink, fits snugly around teeth, near CEJ with recession on #3 and #14, stippled, firm, bleeding when floss in the posterior region

Improvements observed or not? Improvement is observed in the anterior upper incisors

Visit 3 DATE: 4/22/2021

3B 1 8F 0 14B 1 18L 1 24L 0 30L 1

Total: 4 ÷ 6 = Score 0.66 **Good** Improvement from Visit 2? **Yes** No

Is method being used by patient? **Yes** No

Visit 3 Observations: **Localized biofilm interproximally on posterior teeth**

Improvements observed or not? **Improvement is observed in the upper and lower anterior incisors**

Visit 4 DATE: 4/29/2021

3B 1 8F 0 14B 1 18L 1 24L 0 30L 0

Total: 3 ÷ 6 = Score 0.5 **Good** Improvement from Visit 2? **Yes** No

Is method being used by patient? **Yes** No

Visit 4 Observations: **Biofilm retention is still present on #3, #14, #18.**

Improvements observed or not? **Improvement is observed in the anterior teeth and posterior teeth**

Has the patient incorporated your recommended TB and/or flossing techniques? Yes No If no explain why:

Did you observe pt. having difficulty using the TB or flossing techniques? Yes No If yes, explain:

Is there a dexterity concern? Y N

Did you make a change (amendment) in the method to help improve patient compliance? Yes No If yes, explain: **The patient was compliant with flossing anterior teeth only, complained that it is hard to reach the molars, especially on the maxilla. Floss picks were recommended, as it is easier to reach back teeth. Upon implementing floss picks, the patient improved compliance with flossing.**

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