Introduction

Tooth (plural teeth) is defined as any of the hard, resistant structures occurring on the jaws and in or around the mouth and pharynx areas of vertebrates. Teeth are used for catching and masticating food, for defense, and for other specialized purposes. The teeth of vertebrates represent the modified descendants of bony dermal (skin) plates that armoured ancestral fishes. A tooth consists of a crown and one or more roots. The crown is the functional part that is visible above the gum. The root is the unseen portion that supports and fastens the tooth in the jawbone. The root is attached to the tooth-bearing bone, the alveolar processes, of the jaws by a fibrous ligament called the periodontal ligament or membrane. The neck of the root is embraced by the fleshy gum tissue (a specialized area of connective tissue covered with mucous membrane that lines the mouth cavity). The shape of the crown and root vary among different teeth and among different species of animals.

The structure of teeth

All true teeth have the same general structure and consist of three layers. In mammals an outer layer of enamel, which is wholly inorganic and is the hardest tissue in the body, covers part or the entire crown of the tooth. The middle layer of the tooth is composed of dentine, which is less hard than enamel and similar in composition to bone.
The dentine forms the main bulk, or core, of each tooth and extends almost the entire length of the tooth, being covered by enamel on the crown portion and by cementum on the roots. Dentine is nourished by the pulp, which is the innermost portion of the tooth. The pulp consists of cells, tiny blood vessels, and a nerve and occupies a cavity located in the centre of the tooth. The pulp canal is long and narrow with an enlargement, called the pulp chamber, in the coronal end. The pulp canal extends almost the whole length of the tooth and communicates with the body’s general nutritional and nervous systems through the apical foramina (holes) at the end of the roots. Below the gum line extends the root of the tooth, which is covered at least partially by cementum. The latter is similar in structure to bone but is less hard than dentine. Cementum affords a thin covering to the root and serves as a medium for attachment of the fibers that hold the tooth to the surrounding tissue (periodontal membrane). Gum is attached to the adjacent alveolar bone and to the cementum of each tooth by fiber bundles.

**Tooth form and function**

Like most other mammals, humans have two successive sets of teeth during life. The first set of teeth is called primary, or deciduous, ones, and the second set are permanent teeth.

Primary teeth differ from permanent teeth in being smaller, having more pointed cusps, being whiter and more prone to wear, and having relatively large pulp chambers and small, delicate roots. The primary teeth begin to appear about six months after birth, and the primary dentition is complete by age 2 1/2; shedding begins about age 5 or 6 and is finished by age 13. The primary teeth are shed when their roots are resorbed as the permanent teeth push toward the mouth cavity in the course of their growth.

In humans the primary dentition consists of 20 teeth—four incisors, two canines, and four molars in each jaw. The primary molars are replaced in the adult dentition by the premolars, or bicuspid teeth. The 12 adult molars of the permanent dentition erupt (emerge from the gums) behind the primary teeth and do not replace any of these, giving a total of 32 teeth in the permanent dentition. The permanent dentition is thus made up of four incisors, two canines, four premolars, and six molars in each jaw.

Incisor teeth are the teeth at the front of the mouth, and they are adapted for plucking, cutting, tearing, and holding. The biting portion of an incisor is wide and thin, making a chisel-shaped cutting edge. The upper incisors have a delicate tactile sense that enables them to be used for identifying objects in the mouth by nibbling. Next to the incisors on each side is a canine, or cuspid tooth. It frequently is pointed and rather peg like in shape and, like the incisors, has the function of cutting and tearing food.
Premolars and molars have a series of elevations, or cusps, that are used for breaking up particles of food. Behind each canine are two premolars, which can both cut and grind food. Each premolar has two cusps (hence the name bicuspid). The molars, by contrast, are used exclusively for crushing and grinding. They are the teeth farthest back in the mouth. Each molar typically has four or five cusps. The third molar in humans tends to be variable in size, number of roots, cusp pattern, and eruption. The number of roots for each type of tooth varies from one for incisors, canines, and premolars to two or three for molars.

Problems

Caries: Caries, or tooth decay, is the most common disease of the teeth among humans. Apart from the common cold, it is perhaps the most frequent disease in contemporary society. Tooth decay originates in the buildup of a yellowish film called plaque on teeth, which tends to harbour bacteria. The bacteria that live on plaque ferment the sugar and starchy-food debris found there into acids that destroy the tooth’s enamel and dentine by removing the calcium and other minerals from them. Caries usually commences on surface enamel, especially in pits and fissures and between adjacent teeth. From the enamel the process of decay spreads to the underlying dentine, and may finally involve the tooth pulp. Aside from keeping the teeth clean through regular brushing and flossing, tooth decay can be greatly reduced by the addition of fluorides to drinking water. Caries is treated by removing decayed dental tissue and replacing it with inert filling substances.

Bad breath: Medically called halitosis, bad breath can result from poor dental health habits and may be a sign of other health problems. It is often caused by a buildup of bacteria in your mouth that causes inflammation and gives off noxious odors or gases that smell like sulfur or worse.

Malocclusion: The teeth may be subject to certain irregularities in their alignment, such as an abnormality in the relationship between the teeth in opposing jaws. In a less-severe irregularity, one or more teeth may be out of alignment. Both types of problems are best treated early in life through the use of special fixed or removable appliances (i.e., braces).

Sensitive Teeth: Tooth sensitivity is tooth discomfort in one or more teeth that is triggered by hot, cold, sweet, or sour foods and drinks, or even by breathing cold air. The pain can be sharp, sudden, and shoot deep into the nerve endings of your teeth.

Plaque: Plaque is a thin, transparent film on the surface of the teeth, containing bacteria. If the plaque is not removed, it hardens into tartar. Cavities in the teeth and gingivitis (inflammation of the gums) are evidence that this harmful plaque is at work destroying teeth and gums. Brushing and flossing help get rid of plaque. Plaque that is not removed can harden and form tartar that brushing doesn't clean.
Abscessed Tooth: An abscessed tooth is a painful infection at the root of a tooth or between the gum and a tooth. If a tooth abscesses, hold mouthwash in the mouth for several minutes every hour throughout the day. Mouthwash also helps relieve the pain as the tooth heals.

Cavities: Tooth decay occurs when foods containing carbohydrates (sugars and starches) such as breads, cereals, milk, soda, fruits, cakes, or candy are left on the teeth.

Gingivitis: The longer plaque and tartar are on teeth, the more harmful they become. The bacteria cause inflammation of the gums that is called gingivitis. In gingivitis, the gums become red, swollen and can bleed easily. Gingivitis is a mild form of gum disease that can usually be reversed with daily brushing and flossing, and regular cleaning by a dentist or dental hygienist. This form of gum disease does not include any loss of bone and tissue that hold teeth in place.

Periodontitis: When gingivitis is not treated, it can advance to periodontitis which means inflammation around the tooth. In periodontitis, gums pull away from the teeth and form spaces called pockets that become infected. The body’s immune system fights the bacteria as the plaque spreads and grows below the gum line. Bacterial toxins and the body’s natural response to infection start to break down the bone and connective tissue that hold teeth in place. If not treated, the bones, gums, and tissue that support the teeth are destroyed. The teeth may eventually become loose and have to be removed.

Causes

Smoking: Need another reason to quit smoking? Smoking is one of the most significant risk factors associated with the development of gum disease. Additionally, smoking can lower the chances for successful treatment.

Hormonal changes in girls/women: These changes can make gums more sensitive and make it easier for gingivitis to develop.

Diabetes: People with diabetes are at higher risk for developing infections, including gum disease.

Other illnesses and their treatments: Diseases such as AIDS and its treatments can also negatively affect the health of gums, as can treatments for cancer.

Medications: There are hundreds of prescription and over the counter medications that can reduce the flow of saliva, which has a protective effect on the mouth. Without enough saliva, the mouth is vulnerable to infections such as gum disease. And some medicines can cause abnormal overgrowth of the gum tissue; this can make it difficult to keep teeth and gums clean.
Genetic susceptibility and sex: Some people are more prone to severe gum disease than others. Men are more likely to have gum disease than women. Although teenagers rarely develop periodontitis, they can develop gingivitis, the milder form of gum disease. Most commonly, gum disease develops when plaque is allowed to build up along and under the gum line.

Symptoms

- Bad breath that won’t go away
- Red or swollen gums
- Tender or bleeding gums
- Painful chewing
- Loose teeth
- Sensitive teeth
- Receding gums or longer appearing teeth
Tooth Cleanse - II

Your teeth are a direct reflection of your whole body wellness. If you have a healthy diet, then your teeth and gums will be healthy as a result. But there are certain foods that can be thought of as a double-edged sword, in terms of keeping your body healthy and cleaning your teeth at the same time.

Most people have a daily cleansing program for their teeth but they still end up going to the dentist for surgical procedures. These include dental fillings, root canal treatment and, in extreme cases, tooth extractions. Nowadays, a number of parents are determined to keep their children away from chocolate, sugar and other refined foods. However in most of the cases no sooner did the kid is four or five years old, their teeth become full of cavities and molars needed stainless steel caps and required dental fillings on several other teeth. Often, they are shocked that their teeth are decaying, even though they had been so strict about the diet.

Through the years, we search for a way to save our teeth. We try everything from mouth washing with smelly, purple gels to brushing our teeth with numerous pastes, powders, baking soda and salt. We try flossing the teeth, mouth washing with hydrogen peroxide and spraying the teeth with an electric water irrigator. Still the truth is that none of these procedures stop the tooth decay or other tooth problems.

For healthy teeth and gums, it is important to prevent the buildup of plaque. If the plaque is removed on a daily basis, there will be little tooth decay or gingivitis. Over the years, we have found the daily use of a sanguinaria-based mouthwash is the easiest, least expensive way to maintain healthy teeth and gums. Sanguinaria root, also called Bloodroot, is a proven plaque-killing herb.

**Sanguinaria-Mint Mouthwash**

This cleanse is not quick like other cleanses where you can start the cleansing as soon as you have assembled the ingredients. Here, it takes two weeks time to process the ingredient and make it cleanse ready. There are no harmful additives used. The mint brings freshness to breath. Also we can add myrrh because it is a wonderful healing medicine for mouth sores. It does taste somewhat bitter but adding sweetener would defeat its purpose.

**Ingredients**

- One liter bottle (3-3/4 cups)
- 3 Tablespoons dried Spearmint leaves
- 1 Tablespoon Myrrh (pea size pieces) (optional)
15 gm of Sanguinaria root (Bloodroot) or about 1 heaped tablespoon of root pieces

1-1/2 cups of Vodka or suitable alcohol (discuss sir)

Procedure

Step 1
1. Break up Sanguinaria root into small pieces (1/2 to 1 inch).
2. Put all ingredients in a glass jar with a tight-fitting lid.
3. Close lid tightly and shake vigorously.
4. Label and date jar and leave at room temperature for two weeks, shaking contents once a day.

Step 2
1. After mouthwash has set for 2 weeks, strain into a quart measuring pitcher or wide-mouth jar. Strain through several layers of cheesecloth or an old, clean pillowcase.
2. Wring and squeeze any remaining liquid into pitcher, being careful not to allow herb particles into the pitcher.
3. Ten drops of mint oil extract may be added to mouthwash for a stronger mint flavor.
4. Add 2-1/4 cups water to make 3-3/4 cups (1 Liter).

Using Mouthwash
Store mouthwash in bottle with tight-fitting lid. We may use an old mouthwash bottle. Rinse mouth daily with 1 to 2 tablespoons of mouthwash, swirl in mouth for at least a couple of minutes and then spit out. Avoid eating or drinking for at least 30 minutes after mouth washing.

Oil Pulling Therapy:

Oil pulling is a technique that is excellent for oral care. It helps strengthen the teeth and gums, reduces plaque, and relieves bad breath. It is also considered good for overall health as it removes toxins.

- Swish one tablespoon of sesame oil around in your mouth and through your teeth.
- Do this for about 15 minutes or until it becomes thinner and turns milky.
- Spit it out and rinse your mouth with water.
- Repeat the process daily for about a month.
- For better results, use coconut oil for oil pulling.

(For Detail refer Mouth Cleanse)

**Teeth friendly foods**

1. **Tea**: Green tea contains polyphenol antioxidant plant compounds that reduce plaque and help reduce cavities and gum diseases. Tea may help to reduce bad breath as well. Tooth enamel is strengthened because green tea contains fluoride which promotes healthy teeth. Rinses can be made by preparing an herbal infused tea in the usual way or by simply stirring herb powder into water. Hold the rinse in the mouth for a few seconds or up to several minutes, gargle and spit out.

2. **Dairy Products**: Milk and yogurt are good for teeth because they contain low acidity level which means that wearing of teeth is less. They are also low in decay-inducing sugar. The best thing about milk is that it is a good source of calcium, the main component for teeth and bones.

3. **Cheese**: Cheese contains natural cavity-fighting agents as well as vitamins to strengthen the teeth and enamel. The calcium and phosphate, which helps balance pH in the mouth, preserves (and rebuilds) tooth enamel, produces saliva and kills bacteria that cause cavities and disease.

4. **Fruits**: Some of our favorite fruits and vegetables are natural abrasives and eating them scrubs your teeth in a natural and harmless way. Fruits such as apples, strawberries and kiwis contain Vitamin C that holds cells together. If this vitamin is neglected, gum cells can break down, making gums tender and susceptible to disease.

5. **Vegetables**: Vitamin A, found in pumpkins, carrots, sweet potatoes and broccoli, is necessary for the formation of tooth enamel. Crunchy vegetables such as carrots, cauliflower, broccoli and cucumbers may also help clean gums because of the increased chewing it takes to break it down. Onions contain antibacterial sulfur compounds. Tests show that onions kill various types of bacteria, especially when eaten raw. Celery protects teeth by producing saliva which neutralizes acid that causes demineralization and cavities. It also massages the teeth and gums.

6. **Fresh herbs**: Chewing on herbs like parsley, cilantro and mint helps decrease odors caused by a buildup of bacteria. Dried herbs do not do as good as fresh herbs do, however, dried herbs can be used in mouth rinses.
7. **Seeds**: Seeds especially sesame reduces plaque and help build tooth enamel. They are also very high in calcium.

8. **Animal Protein Sources**: Chicken, turkey and eggs contain phosphorus which, with calcium, is one of the two most vital minerals of teeth and bone.

9. **Water**: Water cleans the mouth and produces saliva that deposits essential minerals into the teeth. It keeps gums hydrated and washes away particles from the teeth.

**Daily Tooth Cleanse Guidelines:**

- You can mix baking soda or coconut oil and brush normally to whiten and strengthen teeth.
- Stay away from tobacco products (cigarettes, cigars etc.)
- Brush your teeth twice a day.
- Rinse your mouth after having drinks such as coffee and foods such as tomato sauce.
- Never take too cold water or icy water after hot meals. If you do so, there will be congestion in throat and gum.
- Never develop the habit of eating with one side of the jaw only. If you do not heed this, the other side will suffer in blood circulation and tartar will cover your teeth and thereafter, spongy gums will lead to pyorrhoea.
- Avoid taking sloppy foods. Harder the food, the better for teeth and gums. Sloppy foods give no exercise to teeth. Every organ of the body needs exercise for maintenance of health: otherwise it degenerates and dies.
- Rinse your mouth thoroughly after each meal, especially sweets; if they cling to the teeth, it’s converted into an acid, which makes holes into the teeth. Cleanse your teeth thoroughly after each meal preferably with salt water.