

How dental health relates to overall health

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There has been a lot of press lately about how dental health is related to overall health. It is pretty interesting to look at the diseases and infections of the mouth and see how they relate to certain diseases and infections in general health.

Many of us never think about the digestive track and how it works. It really is a tube that runs through us that starts at the top and after many twists and turns ends up at the bottom. The mouth is often noticed by the teeth, either as a great smile or as a detractor with irregular dark, crooked, missing and decayed teeth. Teeth also help us bite into things, which is called incision by incisors (front teeth) or chewed (occluded) by back or molar/premolar teeth. Incising and chewing mixes food with saliva and helps us to masticate the food and begins the digestive process.

An interesting characteristic of teeth is they are the only hard bony live tissues that stick out of the gums, which we dentists call gingiva. The teeth are suspended in bone by a ligament with a cuff of gum tightly snug like a collar around each tooth. This cuff is designed with the help the saliva and fluids in the gums to keep out of the internal body bacteria and the infections they can cause. Through a pretty complicated immune process, the body combats germs (bacteria) in the mouth from getting into the blood stream between the gums and the teeth.

There is a constant battle between the bodies' natural defenses and the bacteria in your mouth. All of our digestive tracts are coated with bacteria and many of them are actually beneficial such as lactobacillus, which aids in digestion, etc. Most anywhere there are hard surfaces; there are bacteria which under the right conditions can colonize into a biofilm. The mouth is also where we put certain foods which promote the growth of certain bad bacteria. The bacteria which cause tooth decay and/or gum (periodontal) disease live on refined carbohydrates (refined sugars such as cane and corn sugar and refined white flour). Constant and frequent use of these products promotes the growth of bad bacteria to organize in a biofilm along the gingival cuff around the tooth.

These colonies can organize in about 24 hours or faster, depending upon the host's resistance (immune systems ability to resist infections) on the frequency of refined carbohydrate consumption. This biofilm of bad bacteria use the sugars as a food source and produce waste products that are very acidic and irritate the tissues in the gingival cuff. This acid also penetrates the outer crystalline layer of the tooth called enamel which is porous to acid and dissolves the underlying organic layer which bonds the enamel layer of the tooth. This allows the enamel to come off the tooth forming a hole, called a cavity.

The waste products of the biofilm of bacteria also irritate the gingival (gums) around the tooth causing an inflammatory response. They become red and swollen and eventually will become ulcerated and bleed when touched. This open wound and the biofilm are what are thought to relate dental health with overall physical health. Many of the bacteria in the biofilm are thought to cause increased incidences of heart disease and other problems. These infections are also thought to be related to low birth weight babies, ear infections, tonsillitis, strep throat and a host of other systemic conditions. This biofilm is easy to eliminate with appropriate tooth brushing and flossing. You do not actually

remove the bacteria that organize into the biofilm with the brush and floss, but you disrupt it so it cannot start causing problems.

You may have heard of xylitol, which is a sweetener made from birch bark. Xylitol is very sweet and is used in small amounts in many gums and candies. It has a different molecule makeup which cannot metabolize and cause bacteria. If you are an adult and have a sweet tooth and have a cavity problem, you may wish to switch to products sweetened with xylitol. This sugar starves the bad bacteria to death. If your gums bleed when you brush, floss, or eat, you may have a gum infection. If you have not been to the dentist lately, checking for this gum infection may be good for your general health. Next time you go to the dentist ask them if you have any gum infections.