

Unhealthy Mouth = Unhealthy Body

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As a new grad from the Dental Hygiene program I thought I knew it all. After all school taught us all the right stuff and we were taught by the best. We were instructed on how to perform the examination, how to motivate the patient and how to remove the deposits that formed in the mouth. The dental profession has taken away the patients responsibility to care for their own teeth. Year after year the patient would come back with the same amount of deposits in their mouth. Notes written in the patients chart would read almost identical to the notes written from the previous visit. Bleeding was always noted but what we failed to discuss with the patient is that bleeding in the mouth is the very first sign of disease starting in their body. The periodontal pockets would slowly deepen, until the pockets magically increased in depth and formed pus almost overnight. Then one day the patient would have pus in the periodontal pocket. What has changed for them? After all, the patients would keep their scheduled 6 month appointment as recommended by the dental expert – what did we miss?

Why do we accept bleeding gums as part of a normal routine? We do know that if any other part of our body bleeds when you touch it, it is not a very good sign. Why would we, the Dental Hygienist continue to have the same discussions with the patient – “You are not brushing and flossing properly.” If you have bleeding when you brush, floss etc., your gums are infected. When you come back every 3-6 months your Dental Hygienist will remove the deposits for you; again, in essence taking away the patients responsibility to maintain their own healthy mouth. It is time to look at what bleeding gums could be doing to the rest of the body.

Bleeding Gums = Infection= Inflammation, Inflammation is Now on the Radar!

Bleeding gums should be the red flashing light that makes everyone aware, that it is time to pay close attention to what is going on in their own mouth. Effective, proper, daily care must be put into action.

A dental professional needs to help the patient take responsibility for what is happening in their own mouths.

How does inflammation in our mouths affect the rest of the body?

Let's start at the beginning.

Everyone has plaque building up on their teeth every day. Plaque is a “biofilm”, a soft deposit that matures the longer it is able to stay on your teeth.

The main reason for brushing, flossing, water pik and any other home care tools we use are to get rid of the plaque that forms daily on our teeth. When we are not successful at removing all of the plaque from our teeth, the minerals in our saliva contribute to hardening these soft deposits into hard deposits, called calculus.

Once the mature plaque and calculus form around the collar of the tooth, the process of infected gums begins. If the infection stays at the gum level it is called gingivitis. Periodontitis is when the hard deposits start forming under the gumline, affecting the bone that supports our teeth. When the gums become infected, the inflammation process has started.

No one really knows why disease related bacteria is able to survive in the mouth. All we know right now is that the disease related bacteria comes from three places.

1. Parents
2. Pets
3. Lovers

When your gums bleed, usually that is the only telltale sign that your gums are infected.

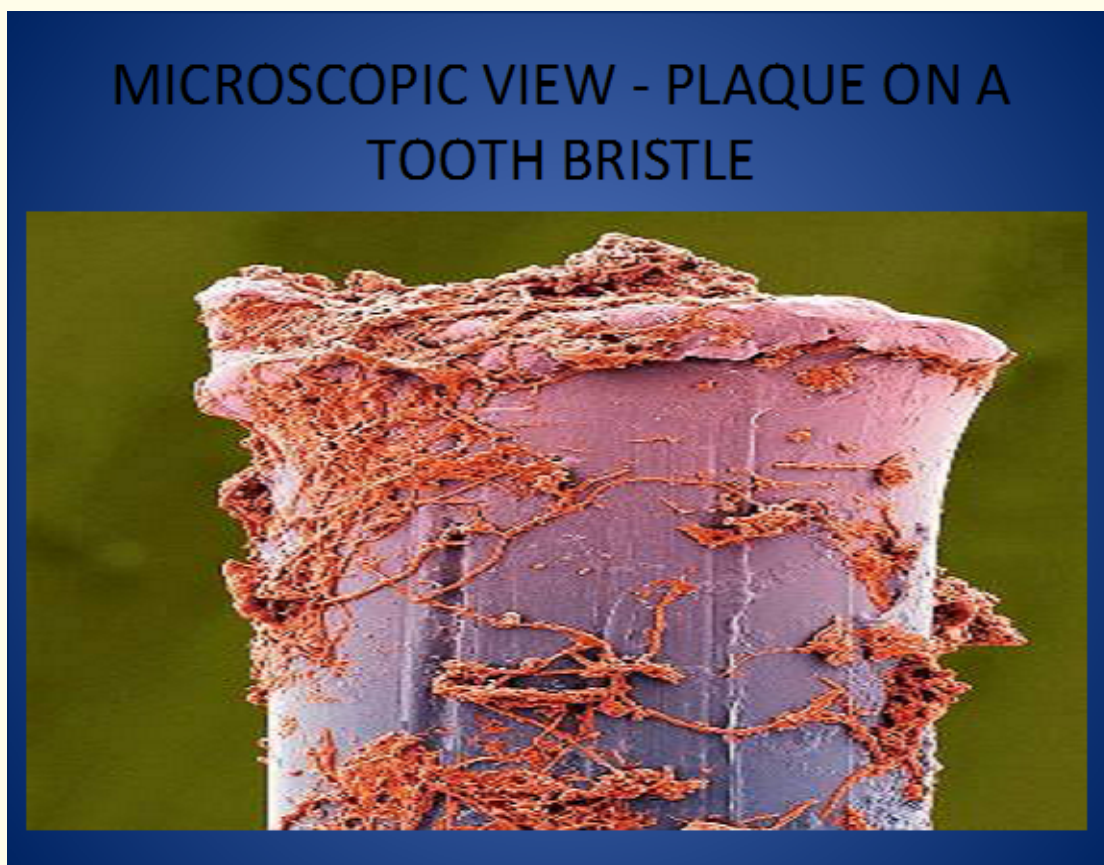


Figure 1

So, what is inflammation and what does that have to do with our mouths?

The latest research on inflammation.

Inflammation is the cause of many diseases. Inflammation is linked to Heart Disease, Alzheimer's, Cancer and the list continues to grow [1,2].

"Inflammation is characterized by several familiar signs, redness, swelling, heat and pain. To understand inflammation is to understand how and why these signs develop. These signs represent a response that is programmed into your tissue. This response is one of your body's principal defense reactions, designed to anticipate, intercept and destroy invading micro-organisms. Inflammation is best appreciated by understanding your body's functioning at the level of cells and tissues. Subsequent processes of tissue repair (healing) involve cell growth and division, cell movement and differentiation, and manufacture of extracellular material" [3].

An easy way to think about inflammation is to remember the last time you had a sliver.

Everybody gets slivers, if the sliver remains in your finger for too long there is an inflammation response. At first you may or may not notice that a foreign body is embedded in the skin. Usually the site becomes red, swollen and you will feel the pain associated with the sliver. If the sliver remains there too long, you will see more swelling and eventually you will see a blister forming with pus inside. This can become very painful. You know at that point that the sliver needs to be removed.

The inflammation process to periodontal disease is very similar to that of the sliver. We know that Periodontal Disease is associated with disease related bacteria. Periodontitis is a chronic infectious disease that is a transmissible disease, present in the majority of adults. When disease related bacteria is present in the mouth, living under the gums you can see red, swollen, bleeding gums but there is one difference from the sliver. There is no pain. Gum disease is not painful until it is too late and your teeth become loose. WHY IS THAT? That is because the bacteria is outside of the gum tissue between the tooth and the gum space. The body goes through the same type of physiological response with slivers, as it does with periodontal disease, minus the signal of pain. The body cannot get rid of the disease related bacteria that is inside of the periodontal pocket. This sets up the inflammation response.

Now the stage has been set for the Oral Systemic Connection.

Dr. Robert Barkleys' Quote:

"Dental Health is Peculiar. The Rich Cannot Buy it and the Poor Cannot Have It Given to Them. I Can Make People More Comfortable, More Functional and More Attractive. I Cannot Make Them Healthy. I Can Teach Them How to Become Healthy but Whether They Remain that Way Will Be Up To Them".

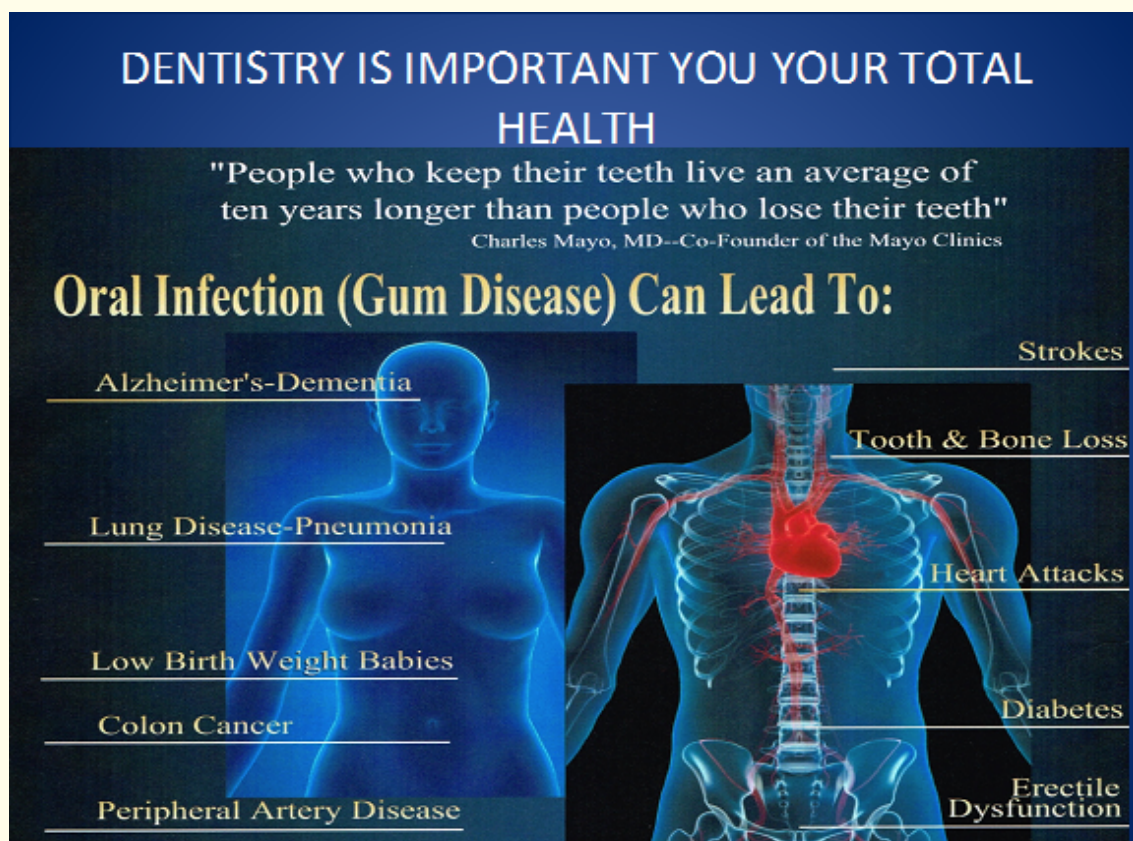


Figure 2

What happens in the mouth affects the rest of the body!

How do we help people take back the responsibility for their own mouth, their own health?

One way to help the patient is to help them understand the disease/inflammation process.

Periodontal Disease

Research shows us that Periodontal Disease is related to different types of disease related bacteria that is able to survive in the oral cavity. These bacteria is anerobic, meaning it does not like any oxygen. It likes deep, dark, moist pockets. Disease related bacteria in the oral cavity creates infection of the gums. Infected gums create inflammation. Research is showing us that most illness in our body's start with inflammation, from one source or another. The mouth is a great place for disease related bacteria to survive undisturbed. This makes gum disease/periodontal disease and systemic illness bi-directional.

The Phase Contrast Microscope.

Fritz Zernike, a Dutch physicist and mathematician, built the first phase contrast microscope in 1938. The advantage of the phase contrast microscope is to enable the viewing of live microorganisms, in their natural state.

Seeing is believing. Once the patient is able to see the live disease related bacteria living in their own mouths, they are now asking the question: What can I do to get rid of the disease related bacteria?

With the use of the phase contrast microscope, we can evaluate disease related anaerobic bacteria that is able to survive in the oral cavity and throughout our bodies. These types of anaerobic bacteria create the Oral Link to Systemic Illness. There are 50 types of disease related bacteria that are able to survive in the oral cavity but we are only able to culture 10 types at this time. It seems this type of bacteria know more about us then we know about them.

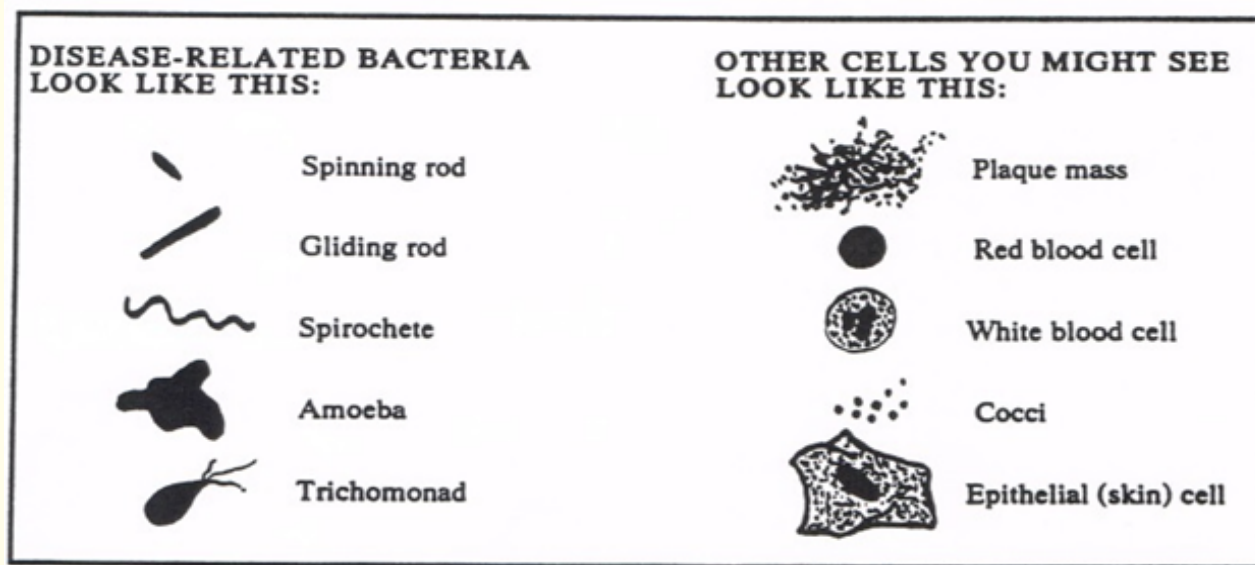


Figure 3

Ways to Identify Disease Related Bacteria

There are three ways to determine which types of bacteria is present

1. Culture bacteria
2. Gram Negative Staining
3. Phase Contrast Microscope

Culture bacteria

Advantages

- Can determine what types of gram negative/gram positive bacteria present
- Provides a list of which type of antibiotics are required to treat bacteria.

Disadvantages

- Sent by mail to laboratory for analysis
- Takes up to 2 weeks for report
- Expensive

Gram negative staining

Advantages

- Can determine what types of gram negative bacteria present

Disadvantages

- Sent by mail to laboratory for analysis
- Takes 1 week for report
- Expensive

Phase Contrast Microscope

- With the use of the phase contrast microscope, we can identify 12 types of disease related anaerobic bacteria that is able to survive in the oral cavity.

Advantages

- Cost Effective
- Able to take slide in minutes
- Slide is viewed with the patient in real time
- Patient is able to view their own bacteria “moving”
- Patient has a better understanding of the infection process

Here is a list of the gram negative, anaerobic bacteria that you are able to see with the Phase Contrast Microscope.

Actinomyces, Amoeba, Bacilli, Branching/ Non-Branching Filaments, Candida Albicans, Cocci, Diplococci, Gliding Rods, Spinning Rods, Spirochete and Trichomona.

It is known that when the gram-negative bacteria exists in a periodontal pocket gram-positive bacteria also survives in the periodontal pocket.

Periodontal Disease is considered episodic. It does not affect every area in the mouth all at once. This is why people usually only loose one tooth at a time.

We know that Periodontal Disease is multi-factorial. There are many factors that affect the disease process. The acronym HONEST AGE breaks down a few of the factors that a dental professional needs to take into account when treating a patient with periodontal disease.

Honest Age

H - Hygiene

O - Occlusion

N - Nutrition

E - Exercise

S - Stress

T - Tobacco

A - Age

G - Genetics

E - Exercise/ Experience

All of these factors need to be included in the treatment plan for periodontal disease. It is almost like putting a puzzle together. The clinician/provider needs to look at all of these factors that affect the health of the person.

Which one can we work on, which ones can we change?

We the clinician and the patient need to look at all of these factors.

Hygiene/home care – how effective am I?

Occlusion – which of my teeth are affecting my bite relationship?

Does it make it more difficult to access with my homecare tools?

Nutrition – is my diet well balanced? What can I do to improve it?

Exercise - am I getting enough daily activity? What can I do to change it?

Stress – How do I handle my stress levels? From a scale of 1 to 10 with 10 being the highest. What can I do to lower my stress levels?

Tobacco – Do I smoke too much? How much is too much?

Do I want to quit smoking?

Age – older people have more difficulties with mobility and dexterity. Are there easier ways to accomplish what I need to get done?

Genetics – some people are predisposed to different illnesses. How do the ones that affect me affect my periodontal disease?

Experiences /Environment - Does a previous dental experience keep me from going back to the dentist?

Am I able to take care of myself in the environment that I live in?

So now that we have an understanding of what infection and inflammation in the oral cavity is all about, we may be able to help our dental patients prevent the cascade of inflammation throughout their body.

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