Inflammatory Disease and the Mouth

Inflammation is a natural and helpful function of the body’s immune system. When a foreign element is present, like infection-producing bacteria, the body pumps blood filled with white blood cells to contain and eliminate the threatening bacteria. All that extra blood creates inflammation, or swelling, in the affected area.

In an ideal situation, the offending bacteria is identified quickly and eliminated through the body’s natural response. More virulent forms of bacteria often require medical intervention with antibiotics or other treatments in order to help the immune system gain the upper hand in controlling the spread of infection. In either case, once the infection is under control, the immune system is supposed to retreat, inflammation subsides, and the body goes back into a state of watchfulness for the next potentially threatening foreign element.

However, for reasons we still don’t fully understand, sometimes the immune systems gets stuck in a continuous inflammatory response, even when it appears that all threatening foreign elements have been eliminated. This uncontrolled inflammatory response is one classic marker of a possible autoimmune disorder, but many other chronic conditions often present with some form of chronic inflammation regardless of whether or not they are currently considered primarily as autoimmune. Rheumatoid arthritis, ulcerative colitis, Crohn’s disease, inflammatory bowel disease, Behcet’s disease, Sjogren syndrome, celiac disease, diabetes, and even atherosclerosis all have chronic inflammatory elements as a primary or secondary component of the disease.

Even relatively minor chronic conditions can have a impact on the body’s overall inflammatory condition. Osteoarthritis, allergic rhinitis, and any other condition ending in -itis, are all essentially inflammatory conditions and can contribute to the overstimulation of the immune system when left unaddressed.

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How Does Inflammatory Disease Relate to the Mouth?

Oral complications like gum disease and oral lesions are significantly more common in individuals who already have an underlying chronic inflammatory condition. Gum disease is actually an inflammatory reaction to the presence of highly virulent bacteria in the space between the gums and the teeth. If these bacteria find a way to hide from your toothbrush and floss, they can begin to multiply quite rapidly. The immune system identifies this increase in bacterial activity as a potential infection and rushes to respond by sending blood filled with white blood cells to the area. Many people misinterpret the bleeding gums associated with gum disease as a result of the bacteria destroying the tissue or brushing too hard, but that bleeding is actually a result of inflammation.

The soft-tissues of the mouth are not at all like the outer skin of the body. They are much more delicate and permeable than skin. When these soft tissues are inflamed because of infection, the smallest amount of pressure can result in bleeding. But that easy permeability may go both ways – the blood comes out, and the bacteria may potentially go in.

Where would that bacteria go once it enters the bloodstream? One area we suspect is the walls of the arteries. Atherosclerosis is a condition in which plaque builds up in your arteries and constricts the blood flow. In the worst cases, these plaques can grow to block the artery entirely causing heart attack or stroke, among other things. Multiple studies from around the world continue to confirm that these arterial plaques contain the same bacteria associated with gum disease. Does atherosclerosis begin with gum disease? Or is it the other way around? We do not know yet, but we do know that the presence of one often indicates a stronger possibility of the other.
Risks and Indicators: A Two-Part Interplay
What’s important to remember when thinking about inflammatory disease and the mouth is that the risks and indicators seem to potentially go both ways. Certainly, individuals who have already been diagnosed with an autoimmune disease or other type of inflammatory disorder are at a much higher risk of developing oral complications like gum disease and oral lesions. But there is a growing basis to suggest that some of these systemic disorders may actually begin to present most noticeably in the mouth first. Further, the development of oral complications in an individual whose chronic inflammatory condition has been previously stable may be an early indication of a flare-up.

Stress and Inflammation
It’s commonly understood that anyone who experiences chronic stress is likely to get sick at some point. We tend to think this is related to the lack of sleep and poor eating habits that generally go with periods of stress, but there is more to it than that – especially for those individuals who already have a chronic inflammatory condition.

Studies are now being published that indicate that chronic stress may result in a condition called glucocorticoid receptor resistance (GCR). GCR directly interferes with the body’s ability to appropriately regulate inflammation. In our practice, we see what may be an example of this response regularly in our dental office. Many, many people who go through periods of intense stress develop gingivitis, or inflammation of the gums, even if their mouths have been previously healthy before. Obviously, for someone who already has an inflammatory disease or disorder, controlling stress levels as much as possible should be an important component of managing their condition.
**Diet and Inflammation**

Nutrition is a huge factor in managing chronic inflammatory conditions. Many highly refined and processed foods are known to be inflammatory whether you have a diagnosed allergy to that particular food group or not. Sugar, trans fats, and even grains can all trigger inflammation – especially when they are over-consumed in their most processed forms.

Avoiding those ingredients and food groups that are particularly inflammatory can be very helpful in limiting inflammation triggers, but there are also specific nutrients and supplements that can actually help combat inflammation that is already present in the body. Healthy fats, curcumin, green tea, Coenzyme Q10, vitamin D and the B vitamins are just a few of the natural anti-inflammatories that could be considered as regular supplements for those who have chronic inflammatory conditions – including gum disease and gingivitis. In some cases, these supplements may be safer and more effective than their pharmaceutical alternatives. As with any other supplementation or dietary changes, please consult directly with a physician who is well-versed in anti-inflammatory protocols to help you decide which dietary changes or supplements are right for you and your condition.

**Conclusions**

The mouth can be a remarkable barometer for the health of the entire body. Making a dentist a part of your overall medical team is important for everyone, but it is even more important for those individuals managing chronic inflammatory conditions. Even if you do not have an inflammatory disease, remember that a dentist is far better-trained to identify oral lesions and conditions than other medical providers generally are. If your dentist has a concern about the relationship of a condition in your mouth to a possible systemic condition, please be sure to follow up with your medical doctor and connect them directly with your dentist if needed.
References:
Journal of Evidence Based Dental Practice: *Oral manifestations of systemic autoimmune and inflammatory diseases: diagnosis and clinical management.*
Proceedings of the National Academy of Science: *Chronic stress, glucocorticoid receptor resistance, inflammation, and disease risk.*