

Should Dentists Assist in the Early Detection of Systemic Disease?



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Over the last year, due to incorporating new FDA-approved blood-screening tests, 22% of our periodontal patients were diagnosed by their respective physicians with several different cancers, diabetes, prediabetes, high-risk for heart attack and/or stroke, and other various systemic medical conditions. Most of the patients appeared to be healthy the day that we diagnosed them with periodontal disease and performed the blood screening. Heart attacks, strokes, diabetes, and cancer are major worldwide health issues. Since it is well-known that patients tend to visit their dentists more often than their physicians, dentists are in a perfect position to play a major role in early detection.¹

In-office blood screening is a new concept in dentistry, and it will take time to gain universal acceptance by both doctors and patients. With proper evidence-based education regarding the facts surrounding the benefits of early detection and the connections to dental disease, it will certainly take hold as an important way to help our patients. With early detection of a variety of systemic diseases, we can play a vital and supportive role in making referrals to the medical community for earlier definitive diagnosis and treatment. This should, of course, help lead to more successful periodontal treatment outcomes due to the earlier intervention in cases where patients often do not even know they have a particular condition or disease.

This early detection and referral model can be supported and accomplished via blood screening in the dental office. Currently, it does not require expensive or time-consuming certification as it did in the past. Convenient, affordable, FDA-approved blood-testing kits are available to dental practices that wish to move into this arena of assisting patients with early detection possibilities. Each self-contained, lab-accurate blood-testing kit contains a patient consent form and simple instructions on how to obtain the 3 drops of blood necessary for lab evaluation. The tests are mailed to the lab from anywhere in the country, and results are faxed to the dentist and mailed to the patient within 10 days, or more quickly if necessary. These screening tests are never performed for a dentist to diagnose a systemic medical problem. They are done to help the dentist, who, by taking into proper perspective the systemic health of a patient during complete oral diagnosis and treatment planning for dental procedures, should be concerned about patients' health and determine if any medical evaluations might be indicated.

Research reports that periodontal disease can be associated with decreased high-density lipoprotein, increased low-density lipoprotein and total cholesterol, high-sensitivity C-reactive protein (hs-CRP), high blood glucose levels, and decreased peripheral blood neutrophil function and count.²⁻¹⁰ Dentists are reporting routine and significant improvement in all 3 blood tests after

periodontal treatment is done utilizing a specific treatment protocol. (It is not within the scope of this article to report on the new periodontal treatment options shown to improve blood chemistry.) If cholesterol and hs-CRP levels are not reduced after periodontal treatment, an underlying medical condition could exist, and a referral to the patient's physician is recommended.

In-Office Blood Testing After Periodontal Treatment

Dentists using the Healthy Heart Dentistry protocol are reporting typical hs-CRP reductions of 30% to 90% in 8 weeks after periodontal treatment. I have consulted with physicians who recommended that periodontal treatment be completed before making a physician referral when there is a modest elevation in hs-CRP and cholesterol. These physicians feel that they can make a more accurate medical diagnosis by controlling the oral inflammation and infection of periodontal disease first. However, this is not to be taken as treatment advice for you to follow. Dentists must have their own guidelines to decide when to refer patients to a physician. If hs-CRP does not reduce to a normal range after periodontal treatment, a referral to the physician with an accompanying letter is completed. An elevated hs-CRP level after periodontal treatment can be due to a variety of medical issues. Five different types of cancer can raise hs-CRP: prostate, lung, colon, Hodgkin's Lymphoma, and recently ovarian.¹¹⁻¹⁶ Last year, several of our periodontal patients exhibited elevated hs-CRP levels after periodontal treatment, and their physicians diagnosed them with 3 of the above cancers. Cancer was found to be a contributing factor in these patients' poor periodontal conditions.

If cholesterol and hs-CRP were elevated after periodontal treatment, physicians diagnosed and treated these patients as being at high-risk for heart attack and stroke. How many cardiovascular events could be avoided in this way? Many times, dentists using the Healthy Heart protocol note a significant reduction of HbA1c and cholesterol after periodontal treatment. If glucose levels are out of the normal range at the beginning of periodontal treatment, a referral to the physician for a medical evaluation is usually recommended.

Dental Offices Can Screen for Diabetes

According to the American Diabetes Association, type 2 diabetes (noninsulin-dependent diabetes) affects more than 20 million Americans and is the most common form of the disease.

The American Diabetes Association has reported that an estimated 54 million people are prediabetic, and many will become diabetics in the next 10 years! Diabetes is a debilitating, crippling, and life-shortening disease. Its most serious complications like blindness, heart disease, and kidney failure often can be prevented with early detection; it is the primary cause of preventable

blindness. It is estimated that 6 million diabetics are undiagnosed and are 3 times more prone to infections like periodontal disease. Current trends show that the incidence of diabetes is increasing at an alarming rate worldwide, especially in India and Asia.

However, because diabetes exhibits few, if any, symptoms until its advanced stages, millions more are in eminent danger of developing the disease and are unaware of it. One of the major problems listed for diabetics is periodontal disease. Periodontal disease can elevate blood glucose, and diabetes can aggravate periodontal disease. When blood glucose (sugar) levels are higher than normal but not yet high enough to be classified as diabetes, a condition known as prediabetes exists. If discovered early, a person with prediabetes can avoid the devastating complications of diabetes through education, diet, exercise, and appropriately prescribed medications. Dentists are in a perfect position to screen for diabetes and prediabetics to help control this future worldwide health crisis.

The first FDA-approved Diabetes Risk Assessment Test Kit became available in January 2007. It is a 2-part process comprised of an immediate fasting glucose reading and a mail-in laboratory analysis for HbA1c, a blood glucose marker for the previous 90-day period. Samples for both tests can be either professionally or self-collected through the use of a simple finger-nick collection kit. Taken in combination, these 2 results become a reliable indicator of diabetes or a prediabetes condition.

Periodontal Disease: A Clue to Other Health Issues

Since 75% of adults over 35 years old have experienced periodontal disease, according to the American Diabetes Association, the question has to be asked, "How many people are being treated for high cholesterol, blood sugar, and hs-CRP because they have untreated gum disease?" We found plenty of patients in our office alone who exhibited significant improvements in blood chemistry after specific periodontal treatment this past year. Dentists must be more diligent in treating patients who exhibit significant bleeding upon a periodontal exam. In my opinion, dentists should be recognized by all healthcare professionals as the first stop in a patient's overall wellness. To date, most medical professionals do not understand the dentist's role in their patients' overall health. It is up to us, as dentists, to educate our medical colleagues diplomatically as to how we can serve as a safety net for early systemic disease detection.

Improving our patients' health and occasionally playing a major role in helping save their lives due to early detection is a new service that every dentist can now easily incorporate into an existing periodontal program. The wholesale cost to the dentist of the 3 blood tests is \$65 before treatment. After-treatment often costs less because fewer tests are usually needed.

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Conclusion

An added benefit we see by incorporating in-office blood screening is increased referrals from area physicians and our patients. Our office experiences new patients who

travel hundreds of miles for this service to treat their periodontal disease. Today, dentists can have any staff member take blood tests that are lab accurate, FDA-approved, require only several drops of blood via a pinprick, and con-

tain patient consent forms in each blood screening kit. Special certifications are not necessary for the dental office to perform these tests. It is my hope that more dentists will put their knowledge of the oral-systemic connection

to work on behalf of their patients. Working to assist your patients in recognizing and acting on the benefits of early disease detection with immediate referrals to their physicians will reap many benefits for all concerned.

References

1. Borrell LN, Kunzel C, Lamster I, et al. Diabetes in the dental office: using NHANES III to estimate the probability of undiagnosed disease. *J Periodontol Res.* 2007;42:559-565.
2. Slade GD, Offenbacher S, Beck JD, et al. Acute-phase inflammatory response to periodontal disease in the US population. *J Dent Res.* 2000;79:49-57.
3. Noack B, Genco RJ, Trevisan M, et al. Periodontal infections contribute to elevated systemic C-reactive protein level. *J Periodontol.* 2001;72:1221-1227.
4. Buhlin K, Gustafsson A, Pockley AG, et al. Risk factors for cardiovascular disease in patients with periodontitis. *Eur Heart J.* 2003;24:2099-2107.
5. Craig RG, Yip JK, So MK, et al. Relationship of destructive periodontal disease to the acute-phase response. *J Periodontol.* 2003;74:1007-1016.
6. Slade GD, Ghezzi EM, Heiss G, et al. Relationship between periodontal disease and C-reactive protein among adults in the Atherosclerosis Risk in Communities study. *Arch Intern Med.* 2003;163:1172-1179.
7. Oz SG, Fentoglu O, Kilicarslan A, et al. Beneficial effects of periodontal treatment on metabolic control of hypercholesterolemia. *South Med J.* 2007;100:686-691.
8. Katz J. Elevated blood glucose levels in patients with severe periodontal disease. *J Clin Periodontol.* 2001;28:710-712.
9. Fredriksson MI, Figueredo CM, Gustafsson A, et al. Effect of periodontitis and smoking on blood leukocytes and acute-phase proteins. *J Periodontol.* 1999;70:1355-1360.
10. Loos BG, Craandijk J, Hoek FJ, et al. Elevation of systemic markers related to cardiovascular diseases in the peripheral blood of periodontitis patients. *J Periodontol.* 2000;71:1528-1534.
11. Helzlsouer KJ, Erlinger TP, Platz EA. C-reactive protein levels and subsequent cancer outcomes: results from a prospective cohort study. *Eur J Cancer.* 2006;42:704-707.
12. McArdle PA, Mir K, Almushtat AS, et al. Systemic inflammatory response, prostate-specific antigen and survival in patients with metastatic prostate cancer. *Urol Int.* 2006;77:127-129.
13. Siemes C, Visser LE, Coebergh JW, et al. C-reactive protein levels, variation in the C-reactive protein gene, and cancer risk: the Rotterdam Study. *J Clin Oncol.* 2006;24:5216-5222.
14. Lehrer S, Diamond EJ, Mamkin B, et al. C-reactive protein is significantly associated with prostate-specific antigen and metastatic disease in prostate cancer. *BJU Int.* 2005;95:961-962.
15. Erlinger TP, Platz EA, Rifai N, et al. C-reactive protein and the risk of incident colorectal cancer. *JAMA.* 2004;291:585-590.
16. Hefler LA, Concin N, Hofstetter G, et al. Serum C-reactive protein as independent prognostic variable in patients with ovarian cancer. *Clin Cancer Res.* 2008;14:710-714.

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