

Shine a light on oral cancer

Most dentists still don't routinely screen for oral cancer, but the technology is available, and providing this potentially life-saving service should be a standard procedure.

by DR. CHRIS KAMMER

THE TEAM

Bringing together a variety of voices for the best advice and big ideas.

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- Dr. John Flucke (Lead)
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WEB EXCLUSIVE

Read about Dr. Larry Hamburg's personal experience battling oral cancer, and find Dr. Larry Emmott's financial model for making oral cancer screenings profitable at dentalproductsreport.com.

THE SET-UP

"As a profession, dentistry prides itself on our emphasis on prevention. We spend countless hours educating our patients on proper diet, home care and the importance of regular preventive care. Why then, when it comes to oral cancer, are we content to not do thorough screenings? And it's not only about 'The Big C.' Proper screenings done with multiple wavelengths of light can help us identify and treat other soft-tissue diseases and conditions as well. We have the means at our disposal, now it's up to us to use the tools. Read Chris's article and let it sink in. Then get out there and do the right thing!" —DR. JOHN FLUCKE, TEAM LEAD

HOW do you kick an entire profession in the rear end to wake it up so it will stop neglecting this most serious and deadly health issue? Where is the leadership that should be putting pressure on all dentists to either perform advanced oral cancer screenings or turn in their licenses?

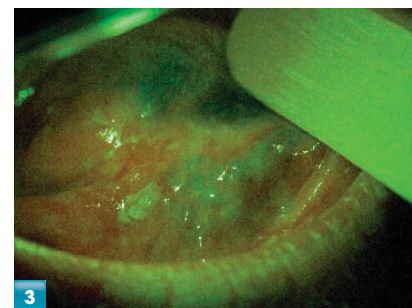
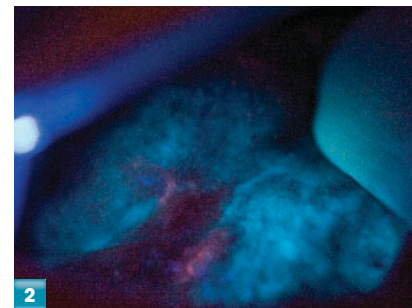
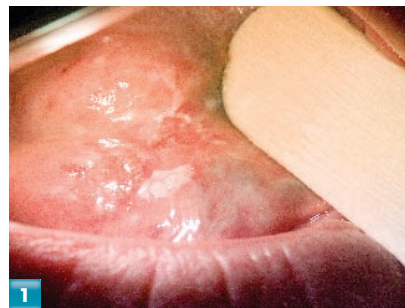
There are wonderful new technologies available to us now for the early oral cancer screening (see "How oral cancer screening products work" p.60), but to talk about that is kind of like putting the cart before the horse. You see, by and large, the vast majority of dentists do not do oral cancer screenings, or at least they don't do effective oral cancer screenings.

Some practices may use the naked eye to identify something that appears abnormal, and maybe they reschedule those patients for another look in a few weeks. Maybe. But what if that patient doesn't return for a follow up? What if the practice doesn't remember to check that abnormality at the next hygiene visit?

THE TAKE-AWAYS

- Oral cancer claims the life of more than 8,000 Americans each year, but early detection could significantly reduce this number.
- Technology that enables dentists to quickly and easily provide routine screenings exists and should be included in patients' regular check ups.

AT A GLANCE



FIGS. 1-6 Trimira's Identafi 3000 uses white, violet and amber wavelengths of light to detect possible malignancies. A scan revealing a lesion determined to be Squamous Cell Carcinoma (Figs. 1-3). A scan showing healthy tissue (Figs. 4-6).

Photos: Trimira Clinical Image Library

This "let's watch it" method has been obsolete for quite some time now. Even the best specialists can't identify a small cancerous lesion from a non-cancerous lesion with their naked eye. If the lesion is big and obvious and it is cancer, then at that point it may be so far advanced it could be too late. So we should stop using the naked eye, grab a hold of some of the new technologies that allow us to see what the naked eye can't see and start giving our patients the best chances

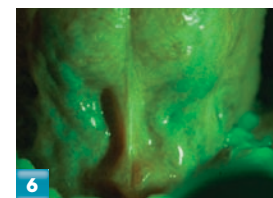
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50%

Just half of the more than **34,000 Americans** diagnosed with oral cancer this year will survive five years after their diagnosis.

Source: Oral Cancer Foundation (oralcancerfoundation.org)

AT A GLANCE





HOW ORAL CANCER SCREENING PRODUCTS WORK

Clinicians have several choices when it comes to oral cancer screening products. While only a biopsy can actually diagnose oral cancer, these four systems employ slightly different methods to help determine if a biopsy is warranted.

01 Brush Test from OralCDx Laboratories: The clinician uses a small brush to scrape a small tissue sample from any spots within the mouth. The sample is transferred to a slide, affixed with a supplied fixative and then mailed to the laboratory for analysis. The lab reports its findings to the clinician and indicates if the sample is "Negative" containing no evidence of oral cancer activity; "Atypical" requiring further analysis; or "Positive" indicating a precancerous or cancerous lesion.

02 ViziLite Plus with TBlue from Zila Pharmaceuticals: This system employs a chemiluminescent light source and a blue pheno-

thiazine dye to help clinicians spot and mark suspicious lesions. The patient first rinses with a dilute acetic acid solution, and then the clinician examines the oral cavity under the light source that makes lesions stand out. The dye is then used to mark lesions so they can be viewed under normal light.

03 VELscope from LED Dental: Using fluorescence technology to examine the oral cavity, this device emits a blue light, and the clinician views the areas exposed to the light through the proprietary optical filtering handpiece. The different fluorescent signatures of the various tissues are evident, and abnormal tissues appear as dark areas, making them easy for the clinician to identify.

04 Identafi 3000 from Trimira: This cordless wand, about the size of a toothbrush, uses three different wavelengths of light for viewing different aspects of the tissue. The different colors of

light help the doctor see aspects of the oral tissues not visible under normal dental lighting. First, a white wavelength of light is used to enhance illumination during the initial evaluation. It is an adjunct to help illuminate the oral cavity for clinicians not already using some type of auxiliary lighting system. The second wavelength is a violet color, which when combined with the included eyewear, allows the tissue to be examined for fluorescence. Healthy tissue has natural fluorescence under the violet light, but areas that bear further evaluation appear dark. If a dark area is seen under the violet light, the device is switched over to the third color, an amber wavelength that allows for deeper penetration to show the underlying vasculature of the area. Abnormal tissue or lesions bearing further investigation will display a diffuse vasculature while the vasculature of normal tissue is clearly defined. This multispectral approach provides more information than standard clinical exams.

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of surviving this deadly disease, as well as avoiding its disfiguring consequences.

We have better means to screen—so let's start using them.

Depressing status quo

Oral cancer is one of the few forms of cancer that has not seen a significant reduction in its mortality rate in the past several decades. Would you like to know why? According to the Oral Cancer Foundation, it is because effective screening just isn't being done. Cancers are advancing and people are either dying or becoming disfigured and losing their ability to speak, swallow, breathe and chew. Late detection of this disease is the primary reason the number of new cases and the death rate just keep climbing. Oral cancer is killing someone in North America every hour of every day.

Yes it's time to pull our profession out of the dark ages, update our skills and use the best tools to screen for this insidious scourge that does not discriminate its victims. Oral cancer can attack almost anyone. Currently up to one-third of the victims are women who don't fall into the usual at-risk profile, which is men older than 40 who are heavy tobacco and alcohol users. This change appears to be connected to strains of the human papilloma virus (HPV) that have been shown to lead to oral cancer. This discovery means oral cancer can be a sexually transmitted disease. In fact, there are as many cases of oral cancer caused by HPV as there are HPV-related causes of cervical cancer.

While this news gives us one more reason to sound the alarm over the importance of new screening methods, it unfortunately is not yet common knowledge. If it is commonplace for women to get a yearly Pap smear screening, why is it not just as common for these same women to get an oral cancer screening? The cost for a cervical cancer screening Pap smear can range between \$50 and \$200. Wouldn't you expect patients to pay just as much to screen for oral cancer that kills three times as many people?

However, practice management experts tell me that up to 80% of dentists never perform these screenings. Why such a lackadaisical approach? Well, historically, dentistry has never been much about life and death. In fact, that is why in years past many college students chose this profession (me included). But thankfully, that is now changing.

Thanks to the mounting evidence in the oral systemic realm that has stimulated a new focus on periodontal health, dentists are becoming the new life-enhancing and life-extending physicians of the mouth. Our efforts to detect oral cancer at its earliest occurrence are right in line with this new movement, and screenings should be a part of the routine care we provide to our patients.

The rise of technology

It seems that a new urgency for oral cancer screening really started earlier this decade with the debut of the brush biopsy from OralCDx (sopreventable.com). By partnering with the ADA, they raised awareness about the problem in our profession and gave us a very simple technique. The release of that product was the first time I learned you can't tell a cancerous or precancerous lesion from a non-cancerous one.

9%

of dentists plan to purchase a VELscope cancer screening system in the next 12 months.

Source: January 2009 DPR Purchasing Survey

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The brush biopsy became an easy way to gather some cells of suspicious lesions by just scraping across them with a tiny brush.

Most people have tiny white or red spots in their mouth at one time or another. Even though most of these spots are harmless, OralCDx laboratory testing can determine if the cells that have been gathered are abnormal cells. The company claims about 96% of small, harmless-appearing oral spots evaluated this way will not contain any abnormal cells. If abnormal precancerous cells are discovered, it usually takes several years before they can cause any harm. At this stage the spots can usually be easily and completely removed.

Most patients find this test tolerable with a few finding it mildly annoying. After the sample has been analyzed via a computerized microscope, a report is issued that classifies the cells as either: Positive (requiring an immediate excisional biopsy), Atypical (requiring a follow-up brush biopsy a few weeks later), Negative (requiring no further action), or Inadequate (which means the test swab did not capture enough cells or the brush was not scraped deep enough through the layers).

“Dentists are becoming the new life-enhancing and life-extending physicians of the mouth.”

The next advance in oral cancer screening was the ViziLite and ViziLite-Plus from Zila Pharmaceuticals (vizilite.com). Here, a patient swishes for 1 minute with a 1% acetic acid to increase the contrast in the tissue, and then the mouth cavity is viewed with a disposable hand-held chemiluminescence device (much like a crack-and-shake light stick). Abnormal white spots and areas are supposed to appear whiter, brighter and sharper than they would during an unaided visual exam. When I used this system I kept asking myself, “Is that whiter? Is that brighter? Maybe, but I’m not sure.” I wasn’t terribly fond of the system

ORAL CANCER RESOURCES

Information about oral cancers, prevention, detection, treatment and other related topics are available from these online resources:

- **The Oral Cancer Foundation:** a non-profit organization dedicated to promoting oral cancer prevention, education, research, advocacy and support activities. (oralcancerfoundation.org)
- **The Oral Cancer Awareness Foundation (OrCA):** a non-profit founded in 2007 by oral cancer survivor Dr. Larry Hamburg and dedicated to promoting early detection and screenings. (oralcancerawareness.com)
- **What You Need to Know About Oral Cancer:** information on oral cancer related topics from the National Institutes of Health and the National Cancer Institute. (cancer.gov/cancertopics/wyntk/oral)
- **ADA Oral Health Topics - Oral Cancer:** information from the American Dental Association on oral cancer with a focus on early detection in dental offices. (ada.org/public/topics/cancer_oral.asp)

and patients were never particularly fond of the taste of the acetic acid.

The ViziLite-Plus system uses a staining system called TBlue (Toluidine Blue) that is a dye that differentially stains premalignant and malignant squamous cell carcinomas. The TBlue doesn’t stain the benign areas, which can be useful for identifying cancerous cells beyond what appears to be the margin of a lesion.

Next, a simple and very noninvasive technology arose—LED Dental’s VELscope (ledental.com). Using tissue fluorescence technology, the VELscope allows you to

but also the red ones that have been shown to have a higher likelihood of being dysplasia or cancer. I enjoy the simplicity of this system because you just shine the light and observe. Easy.

A new system, the Identafi 3000 from Trimira LLC (trimira.net), recently entered the ring. It uses a violet light to create fluorescence, a white light for normal viewing, and an amber light to see surrounding morphology. Visualization is everything, and the Identafi 3000 is attempting to throw more light on the subject to give us better eyes.

All of the technology discussed here should always be used in combination with a comprehensive head and neck exam. You will want to learn to examine commonly overlooked areas. Dr. Mark Castle created a DVD I have found to be helpful as a guide for this part of the exam. It can be obtained at GoToDDS.com.

The time is now

There was a time when cervical cancer was a major killer of women in the United States. Then suddenly within a decade, the mortality rate plummeted by 70% because of public education, early detection via a standardized screening (the Pap smear) and patient compliance. The same results should occur if we apply this approach to oral cancer, whose mortality rate has not improved significantly in 40 years.

The technology is here. We hold our patients’ lives in our hands and we could be doing so much more. We need to start now. ●

“see” below the surface of the tissue where pre-malignant changes most often start. When you shine this blue light into the mouth, the healthy tissue gives off a bright green glow. The abnormal and potentially premalignant dysplastic tissues or cancerous lesions will stand out by appearing as irregular dark areas.

I have seen these dark areas and every time I do, I also look at the area again without the VELscope. I use just my magnification and overhead light to confirm this would have been an area I would have missed without the VELscope. Another advantage of the VELscope is it enhances the visualization of not only the white lesions



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In addition to those mentioned in the article, here are other products you can use to help with the fight against oral cancer.



Orascope

Orascope DK

A battery-powered handheld LED light with interchangeable diagnostic instruments, the **Orascope DK** can help identify potentially cancerous tissue. The oral lesion instrument works with a mild acetic acid rinse to improve screenings.
orascope.com



PhotoMed Int'l

VELscope Photography Package

To enhance consultations and referrals with clear images from inside the mouth, the **VELscope photography package** allows a digital SLR camera to be connected to the VELscope system.
photomed.net



AdDent Inc.

Microlux Exam Kit

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addent.com

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