SPOTLIGHT ON SPECTRA: Cutting Edge Patient Care

By Karen Siebert, RDH, MA

Sometimes we just need an answer. Enter Spectra, the caries detection device ending "wait and see" dentistry. While traditional explorer and radiograph exams cannot alert practitioners to the earliest stage of carious lesions, Spectra's blue light LED fluorescence quantifies porphyrin by-products typically present in early carious lesions. A spectrum of color and corresponding numbers illustrates areas in need of proactive remineralization regimens, sealants, or restorative therapy. This information is clear-cut and simple for patients to see and accept treatment recommendations, historically a challenge to achieve without visuals.

Why I use it…

Spectra may be highly sophisticated in its detection capabilities, but it is simple to use in the operatory. A lightweight handle, long USB cord and quick connect makes it easy to pick up and start an exam. No worries about image quality or focus – a ten-millimeter spacer makes every image clear and reproducible. Two large capture and save rings make it easy to analyze the image without fumbling for a tiny button. Images save to the patient record within most imaging software and project side-by-side with Polaris intraoral images and radiographs for even more clarity and conversation. (figure 1)

Concerned about enamel rod disruption when exploring? Spectra's laser fluorescence is a non-invasive approach to early caries detection. The spacer lends caries detection consistency that is not possible with other detection devices for an accurate and reproducible image. Spectra is a partner in prevention for the hygienist. Use the fluorescence to detect plaque in a colorful way that patients respond and relate to oral hygiene instruction. The red fluorescing plaque and calculus illustrate focus areas without messy disclosing solution (figure 2).

Why I like it…

The Doppler radar-like image illustrates decay in all stages from early to advanced, giving practitioners more options for treatment planning (figure 3). The earliest stages illustrated are unlikely to be detected with a traditional explorer exam. This early information offers practitioners the chance to proactively intervene and begin remineralization. Patients understand Doppler radar, and relate easily to the treatment recommendations based on the color scale. The blue light translates healthy enamel to green, and porphyrin by-products to red. With the tap of a button the image is translated into a colorized map. For further clarification, a numerical scale from one to five corresponds to the colors (figure 4).

Practitioners are able to develop their own parameters for treatment as they familiarize themselves with the scale. Whether choosing a remineralization protocol, sealant placement, or a larger restorative need, choices for treatment are available with Spectra's visualization of the smallest bacterial activity.

Recurrent, marginal decay is one of the most frustrating to detect and treat early. By the time a traditional exam picks it up, a substantial amount of tooth structure has to be removed to eliminate hidden decay. Spectra detects the earliest marginal decay around amalgam and composite restorations, which means minimal tooth structure is removed during restorative therapy. Spectra also minimizes tooth structure removal during restorative preparations. During the prep, remove residual bacterial smear and use the Spectra to assess remaining decay. When there is no remaining phosphorescence, place appropriate restorative material. Prepping to the point of definitive bacteria removal lessens tooth structure loss and maximizes conservative treatment.

Spectra is cutting-edge technology hygienists can effectively utilize to assess, diagnose, plan and implement patient care and communication without questioning the level of decay present and beyond conservative treatment. It aids in CAMBRA assessment and tailors homecare discussions. Detecting early carious lesions and difficult areas of plaque control empowers hygienists to do what they do best - disease prevention and promotion of oral and systemic health.

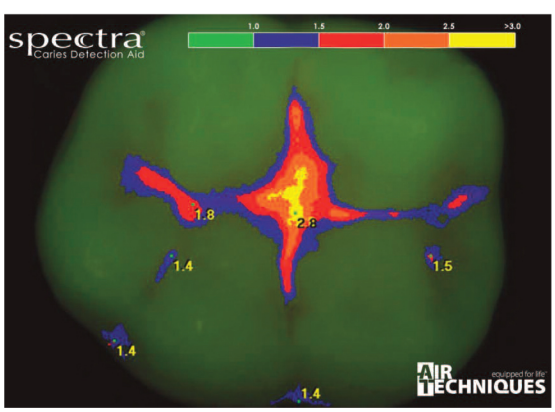

Figure 4: Courtesy of Air Techniques, Inc.

Figure 1: Polaris, Spectra, and ScanX images of the maxillary first molar

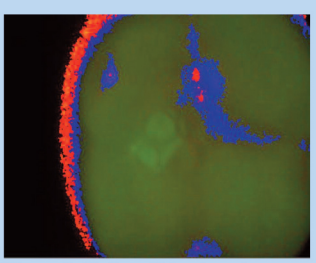

Figure 2: Red and blue imaging represents gingival plaque.

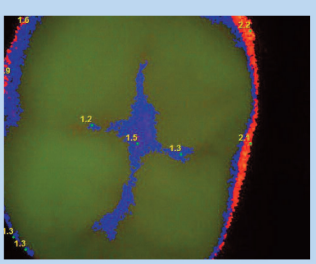

Figure 3: Initial enamel caries with numerical indicators. Peripheral colorization represents only gingival plaque, not caries.