

DON'T GUESS. KNOW.

Devices designed to deliver fast, accurate, consistent diagnosis.

by Dr. Larry Emmott

One of the most exciting new-product development areas is high-tech diagnostics. At its core is the ability to scientifically measure a biologic condition and convert the measurements to a digital format for analysis and recording. The result is a highly accurate and consistent measurement.

We'll look at devices that have been available for some time and have a proven track record, as well as newer high-tech diagnostic devices and future developments.

But before we begin, here's a humorous look at traditional diagnostic "techniques" at the Neverland Dental Clinic.

WHO'S RIGHT?

Wendy goes to the Neverland Dental Clinic for a check-up. Tinkerbell, Peter Pan, and Captain Hook all probe the same area in her mouth.

Looking at the dipstick (probe), Tinkerbell wonders to herself, "Is that tissue over the black line? How much over?"

"Maybe it's a three?" says Tinkerbell.

"Or a three-and-a-half?" asks Peter.

"No," says the Captain. "It's a four." He pushes the hardest.

Next, they poke the tooth with a sharp stick (explorer) looking for decay. Tinkerbell has a tiny, very sharp stick, and she thinks the tooth might be starting to decay. The Captain uses his hook and can't feel anything. So they decide to "watch" it.

These traditional diagnostic methods have this in common: They are subjective, vary significantly from one operator to the next, and aren't very accurate.

The problems Wendy experienced at the Neverland Clinic are not unusual, though. Different operators, with different skills and different "push" levels, can't help but come with different measurements.

Thanks to today's high-tech diagnostic devices, you can do better.



The Florida Probe system helps command the patient's attention through both sight and sound. For more information and tools to integrate the software into your practice (or update your current system), visit www.floridaprobe.com.

PERIO PROBING

The Florida Probe (www.floridaprobe.com) periodontal probing and charting system uses a carefully calibrated tip to ensure that everyone pushes the probe handpiece with exactly the same pressure, 15 grams. The instrument then takes a digital measurement, which is recorded to a precision of 0.2 mm.

All periodontal findings taken with this probe—including recession, pocket depth, bleeding, suppuration, furcation involvement, mobility, and plaque assessment—are recorded as a digital chart, which becomes part of the patient's electronic record.

The probing system, not the operator, calls out pocket depths and bleeding sites: The patient will hear a female voice, male voice, and/or sound effects from the computer. They hear the results from the computer, then visually witness the exam on a color monitor with color-coded digital readouts—green (healthy), black (pocket-depth sites), and red (problem areas)—to identify the risk stages of disease.

The result is fast, accurate, and consistent periodontal charting. A single operator can complete a full exam in 10 to 12 minutes.

CARIES DETECTION

Researchers have determined that decayed dentin reflects laser light or fluoresces differently than healthy dentin, and that this difference can be measured. Here are examples of two caries detection devices.

DIAGNOdent. The DIAGNOdent laser fluorescence caries detection aid and the DIAGNOdent pen (www.kavousa.com) measure the difference between decayed and healthy dentin, then use the data to create a digital readout predicting the presence of decay.

To use the device, the operator shines the DIAGNOdent laser light into an occlusal groove. The instrument then reads the resulting fluorescence and displays both a numerical value and an audible tone. "Tone" may be too nice a word. It is really an annoying buzz, but it definitely gets the patient's attention. The bigger the number, the louder the buzz, the more likely decay is present.



The DIAGNOdent pen (top) and D-Carie mini (above) allow you to hold innovative caries detection technology in the palm of your hand. Having a consistent means of recording changes in dentin and enamel allow you to track a patient's progress from visit to visit, providing you with the information you need to recommend the specific treatment they need.

The numerical readout provides an objective measurement and a reliable method to track changes over time.

D-Carie mini. The D-Carie mini (www.neks.com) detects caries by identifying changes in the enamel. A pen-like version of the original, the D-Carie mini can be used as an aid in the diagnosis of both occlusal and interproximal decay. This cordless, lightweight model emits both an audible tone and a light signal to alert the operator to the presence of decay.

CALCULUS DETECTION

The DetecTar mini calculus detector (www.neks.com) looks and feels like a conventional periodontal probe. However, it emits light through a fiber optic that reflects off subgingival calculus.

Calculus has a specific spectral signature that is sensed by an optical fiber and converted into an electrical signal that is analyzed by a computer-processing algorithm. When the system detects the presence of calculus, a light at the end of the probe lights up, and the instrument emits a sound signal.

Clinical research has shown that when an operator detected the presence of calculus on a specific region of the tooth, there was only a 9.6% error rate with DetecTar, compared to a 71.9% error rate when using a traditional periodontal probe.



It's like having a second set of eyes! The DetecTar mini calculus detector helps you determine the "hot spots" in your patients' mouths, allowing you to then scale more efficiently and effectively. Visit www.neks.com for more info.