

# Choosing intraoral radiography

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Ninety-eight percent of radiographs are still taken intraorally. It's certainly simple to buy whatever your reps suggests. But he isn't the one who has to live with the choice. Here are some decision points you may want to consider.

## **\_Image quality**

If you're not getting great images, what's the point? High-contrast, high-resolution images yield better diagnoses, easier patient acceptance and more production. So how do you know what systems will yield great images?

The last peer-reviewed research on the topic was in 2013, in the December issue of *OR*. In the article\*, a result chart shows some clear leaders. Combining results for both contrast and spatial resolution, the leaders bunched at the top. In alphabetical order, they were Carestream, DEXIS, Gendex and XDR.

The old Schick Elites didn't make the cut, but the

Schick 33s were just coming out; you may want to add them to the list.

You can even buy the same phantom\*\* they used and do the tests for yourself. Interestingly, the system's software seemed to be important. Belgold's offering performed poorly even though they were using the same pixel technology as XDR; XDR's software seemed to make the difference.

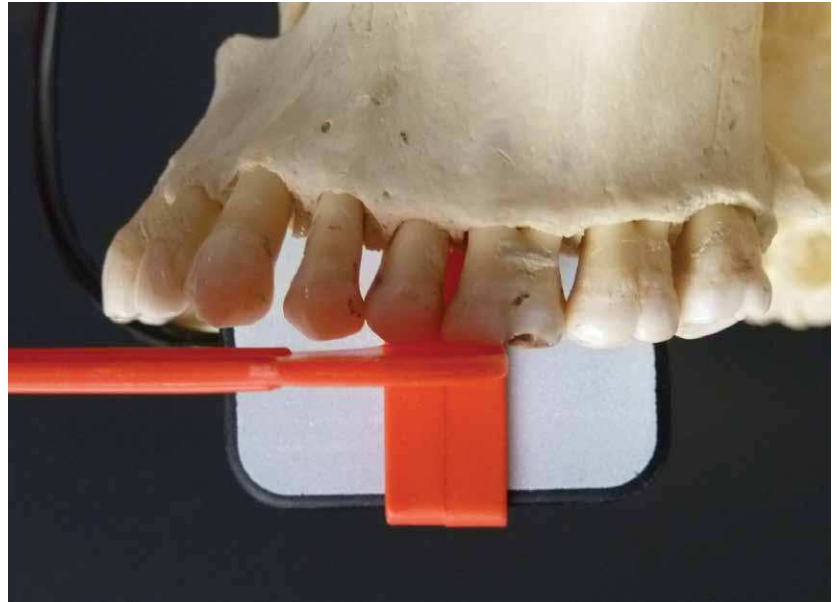
## **\_Getting the shot**

If you can't capture the entire canine in your PA, or can't image its distal aspect in your bitewing, then you just end up taking extra radiographs, wasting time and needlessly exposing your patient.

So check out the length of each sensor's actual imaging area. And check out each sensor's dead space, especially at the narrow edge where the cord is.

Every millimeter of dead space there makes it that much harder to capture the canine/premolar contact with proper paralleling technique.

Minimal dead space, rounded corners and a white face are important for getting the mesial of the first premolar. (Photos/Provided by XDR)



## \_Software

Try the software! If it doesn't seem immediately easy to use, just imagine the time your staff will waste wrestling with it in the first weeks and over the years.

Check the image manipulation. You should find single-click abilities for modifying contrast and brightness, multiple levels of sharpening, and specialty filters for hard and soft tissues. And some sort of feedback on exposure will help your auxiliaries train themselves to stop underexposing your images.

Make sure that you can design your own mounts, that cumulative measurements are simple, and that exams are easy to transfer from the wrong to the right patient. See if it can send and receive secure emails in DICOM format.

And don't be afraid to switch — database conversions are getting better all the time.

## \_Cost

Consider all the costs. If you have to pay every year for a warranty — guess what — that's part of the cost of the sensor. And if someone promises a long warranty, get the details of what happens if there's a failure during the second year. If you have to pay for a replacement sensor, that's not a warranty; it's a replacement plan.

Figure on your staff damaging a sensor at least once every five years. And consider software costs. If the software is installed on 10 computers but you only use four of them at any one time, are you paying for 10 licenses or just four?

## \_Ergonomics

Is the sensor rounded enough? That will make your patients more comfortable and your assistants faster. Is the sensor easy to see inside the mouth? Easy to clean? Can you plug it directly into the computer, or do you have to fret with an interface box?

## \_Integration

The conglomerates like to talk about integration between practice management and imaging sys-

tems, but is an extra click worth having lower-quality images or software that's under-featured or hard to use? And don't forget the advantages of having both software and sensor provided by the same manufacturer. Both image quality and service may depend on it. And who needs finger pointing?

## \_Service

How much will it cost you to be without your imaging even for one day?

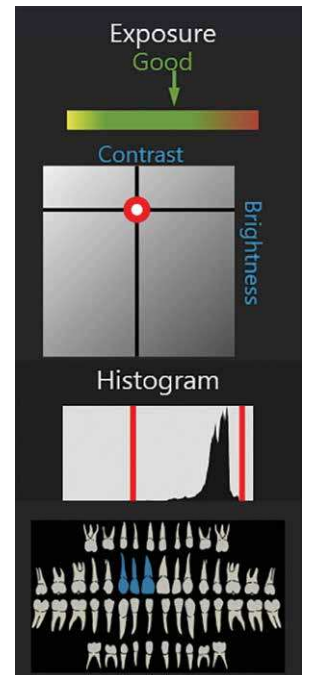
Don't be shy about asking imaging vendors for statistics about their response time, or about paying a nominal sum for such support. Make sure you're talking to the manufacturer of the sensor, to the writer of the software.

Have your IT guy interview them. See how long the same owners have been in charge. Ask friends. Check on message boards.

There's no question that doing a bit of research, considering a five-year cost of ownership and asking questions can save you time, money and frustration. Over decades of experience, doctors who did this were far happier. Know the differences. Make your own choice.

## \_References

- \* Udupa H, Mah P, et. al. "Evaluation of image quality parameter of representative intraoral digital radiographic systems." *Oral Surgery Oral Medicine Oral Pathology Oral Radiology*. 2013 December; 116(6): 774-783.
- \*\* Mah, Peter, W. Doss McDavid, and S. Brent Dove. "Quality assurance phantom for digital dental imaging." *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology* 112.5 (2011): 632-639.



Software controls to promote optimal diagnosis.