Unfortunately, these have generated misconceptions about dental CBCT, or 3-D cone-beam computed tomography scans.

The dental CBCT imaging method allows orthodontists and dentists to obtain vital three-dimensional information without exposing patients to high levels of radiation that come from medical CT scans. An in-office imaging method is more convenient; it saves the patient travel time to and from the hospital and for follow-up examinations after treatment.

Orthodontists and other medical professionals ascribe to the ALARA (as low as reasonably achievable) protocol concerning radiation levels. This protocol guides practitioners to expose patients to the least amount of radiation possible while still gaining the most pertinent information for proper diagnosis.

The differences between dental and hospital scans derive, in part, from the method of capturing the information.

The average medical CT scan of the oral and maxillofacial area can reach levels of 1,200–3,300 microsieverts, the measurement of radiation absorbed by the body’s tissue. These significant levels are attributed to the method of exposing tissues to radiation. With the hospital scan, the anatomy is exposed in small fan-shaped or flat slices as the machine makes multiple revolutions around the patient’s head. To collect adequate formation, there is overlapping of radiation. In contrast, the dental scan captures all the anatomy in one single cone-shaped beam rotation, decreasing the exposure to the patient of up to 10 times less radiation.

For example, radiation exposure using the standard full field of view from an i-CAT® CBCT machine (Imaging Sciences International) is 56 microsieverts. These machines are also available in different fields of view, thereby reducing radiation exposure even more, depending upon the needs of the patient.

For other comparisons of exposure, consider that a typical 2-D full mouth series runs 150 microsieverts while a 2-D digital panoramic image ranges between 4.7-14.9 microsieverts.

Researchers who have developed this technology have achieved the goal of allowing dentists to achieve the same information gained from a medical CT, without the additional radiation exposure. Orthodontists who do not own their own CBCT machines can take advantage of this imaging method by referring patients to imaging centers to acquire this valuable information.

The knowledge obtained from capturing 3-D scans has the ability to influence the effectiveness and efficiency of dental treatment.

A dental CBCT scan offers the views and detail needed to perform the latest procedures, while avoiding the unnecessary higher levels of radiation emitted from hospital scans.

As the technology continues to evolve, the possibilities for improved dental care can only increase.

Increased software compatibility with surgical guides and orthodontic applications has made CBCT scanners an imperative for some dental offices.

As an oral maxillofacial radiologist and an educator, I firmly believe that with knowledge comes responsibility to provide patients with the best dental care in the safest way possible — a dental CBCT accomplishes this goal without the additional risks involved with hospital scans.

Dr. Bruce Howerton is a board-certified oral and maxillofacial radiologist who practices privately in Raleigh, N.C. He received a DDS from the West Virginia University School of Dentistry in 1985.

He completed a certificate in endodontics in 1987 from the University of North Carolina School of Dentistry and practiced surgical and non-surgical endodontics in Asheville, N.C. for eight years.

In 1999, he entered the UNC Oral and Maxillofacial Radiology graduate program and completed the master of science program. Howerton became a diplomate of the American Academy of Oral and Maxillofacial Radiology in 2003.

For more information, see www.carolinaomfimaging.com.

For other comparisons of exposure, consider that a typical 2-D full mouth series runs 150 microsieverts while a 2-D digital panoramic image ranges between 4.7-14.9 microsieverts.

Researchers who have developed this technology have achieved the goal of allowing dentists to achieve the same information gained from a medical CT, without the additional radiation exposure. Orthodontists who do not own their own CBCT machines can take advantage of this imaging method by referring patients to imaging centers to acquire this valuable information.

The knowledge obtained from capturing 3-D scans has the ability to influence the effectiveness and efficiency of dental treatment.

A dental CBCT scan offers the views and detail needed to perform the latest procedures, while avoiding the unnecessary higher levels of radiation emitted from hospital scans.

As the technology continues to evolve, the possibilities for improved dental care can only increase.

Increased software compatibility with surgical guides and orthodontic applications has made CBCT scanners an imperative for some dental offices.

As an oral maxillofacial radiologist and an educator, I firmly believe that with knowledge comes responsibility to provide patients with the best dental care in the safest way possible — a dental CBCT accomplishes this goal without the additional risks involved with hospital scans.

Dr. Bruce Howerton is a board-certified oral and maxillofacial radiologist who practices privately in Raleigh, N.C. He received a DDS from the West Virginia University School of Dentistry in 1985.

He completed a certificate in endodontics in 1987 from the University of North Carolina School of Dentistry and practiced surgical and non-surgical endodontics in Asheville, N.C. for eight years.

In 1999, he entered the UNC Oral and Maxillofacial Radiology graduate program and completed the master of science program. Howerton became a diplomate of the American Academy of Oral and Maxillofacial Radiology in 2003.

For more information, see www.carolinaomfimaging.com.

**IT’S TIME FOR Your Practice CHECK-UP**

If your practice is suffering from loss of **profitability** it may be time for you to seek the professional help of OrthoSyneetics. OrthoSyneetics will provide you with a complete **Practice Check-Up** to diagnose all areas that are causing you pain and suffering.

This 2 day on-site consultation evaluates key areas of your practice including:

- Scheduling Efficiencies
- Overhead Costs
- Accounts Receivable
- Statistical Comparison to National Averages
- Team Performance Review

Give us a call today to schedule your on-site practice consultation; we have the cure for practice decline.

www.orthosyneetics.com
1-888-622-7645