Pioneering Planmeca

Ultra Low Dose protocol

An even lower patient dose than in panoramic imaging

Units in the Planmeca ProMax 3D family offer the unique Planmeca Ultra Low Dose imaging protocol, which enables CBCT imaging with an even lower patient radiation dose than standard 2-D panoramic imaging. This pioneering imaging protocol is based on intelligent 3-D algorithms developed by Planmeca and yields a vast amount of detailed anatomical information at a very low patient dose.

The protocol can be used with all voxel sizes and in all imaging modes from Normal to Endodontic mode. Using the Planmeca Ultra Low Dose protocol reduces the effective patient dose by up to 75–80%.

Ultra low dose images are ideal for many clinical cases, such as:

Orthodontics:
- Defining the amount of bone around the root
- Localising unerupted and impacted teeth before orthodontic treatment
- Defining orthodontic landmarks for cephalometric analysis

Post-operative and follow-up images in maxillofacial surgery

Airway studies

Sinus studies

Implant planning.
The Planmeca Ultra Low Dose protocol has changed 3-D imaging completely

Prof. Dr Axel Bumann DDS, PhD, orthodontist, oral surgeon, and specialist in oral and maxillofacial radiology at MESANTIS 3D Dental-Radiologicum, the largest network of dental 3-D X-ray digital volume tomography institutions in the field of dentistry Germany, said: ‘We at MESANTIS 3D Dental-Radiologicum produce about 7,500 CBCT images per year at eight locations in Germany. Our main concern in X-ray imaging is to reduce the possible radiation dose as much as is reasonably achievable (ALARA principle). Traditional digital 2-D X-rays at an orthodontist’s clinic usually have an effective dose ranging between 26–35µSv (ICRP 2007). Conventional CBCT images of the head with modern CBCT equipment show an effective dose ranging between 49 to 90µSv.

The latest imaging protocol with a specific associated algorithm is called the Planmeca Ultra Low Dose protocol. In medical terms, it allows radiologists to adjust imaging parameters individually according to the clinical needs of each case. The mA-values, in particular, can be individually adjusted and reduced for each patient, as it is required according to all international scientific guidelines. Therefore, it is possible to further reduce the effective dose significantly by using the Planmeca Ultra Low Dose protocol. Depending on the field of view, nowadays CBCT equipment with a Planmeca Ultra Low Dose algorithm has an effective dose between 4 to 22 or 10 to 36µSv.

Our patients and referring colleagues are always happy to hear that the effective dose for certain indications is now even lower than in traditional 2-D X-ray imaging. Since last year, we have been able to replace the common CBCT protocols with the Planmeca Ultra Low Dose protocol.

At MESANTIS 3D Dental-Radiologicum in Germany, the Planmeca Ultra Low Dose imaging protocol is used either with a small or large field of view. Using the new protocol, a lot of patients can benefit from improved 3-D diagnostics without being exposed to a higher radiation dose.’

Prof. Dr Axel Bumann declares that he has not received any financial reward or other benefit for this statement.