Bitewing dose reduction using TWAIN

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**Background:** TWAIN stands for “technology without an interesting name”: TWAIN is the interface standard for Windows and Mac that allows imaging hardware devices to communicate with imaging processing software. Prior to TWAIN, image acquisition devices all came with their own proprietary software, now nearly all imaging processing software today is TWAIN compliant.

**Objective:** To determine if using TWAIN for bitewing imaging reduces the absorbed dose and the effective dose to the patient when compared with EMAGO.

**Materials and Methods:** Dose measurements were obtained using Optically Stimulated Luminescent (OSL) dosimeters placed in pre-manufactured slots at the location of 23 head and neck anatomical structures of an anthropomorphic female CIRS phantom. A Schick direct digital sensor was placed within the phantom in a bilateral removable cutout corresponding to typical sensor placement for bitewing radiographs. Exposures were acquired using a Gendex 765 (65 kVp, 7 mA) and a Gendex 770 (70 kVp, 7 mA) x-ray machines. The TWAIN exposures were 0.63s for the 765 machine and 4 impulses for the 770 machine and the EMAGO exposures were 0.125s for the 765 machine and 8 impulses for the 770 machine. All exposures were repeated 10 times. The results were divided by their respective repetition numbers to calculate average dose. The organ fractions irradiated were determined from ICRP-89 reference phantoms according to age. ICRP-103 tissue weighting factors were also applied.

**Results:** Overall the TWAIN software reduced the absorbed dose at 65 kVp by 64% and at 70 kVp by 61%. When calculating the effective dose the reduction at 65 kVp was 64% and 45% at 70 kVp.

**Conclusion:** Our data showed that use of the TWAIN software yielded the lowest absorbed dose and effective dose to organs of the head and neck at all exposure times for bitewing radiographs.

A critical appraisal of SFOA as compared to traditional surgical orthodontics: A short term experience demonstrated through clinical cases

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Orthognathic surgery is gaining more positive response in India over the recent years owing to the increase in awareness to facial esthetics as the priority in undergoing treatment for skeletal malocclusions. Worsening of facial appearance during the period of pre surgical orthodontics has been the reason for shift towards a surgery first approach in the management of dento-facial deformities. A universal method for the use of surgery first process is difficult to adapt as the majority of patients worldwide treated by “Surgery First” approach belong to skeletal Class III malocclusion. On the contrary, the Indian population showed diversity in ethnic facial pattern and presented more skeletal Class I and Class II malocclusions. The objective of this paper is to highlight differences in treatment planning and execution of surgical first approach in severe skeletal Class I, Class II and Class III malocclusions and compare them to the conventional orthodontics first approach through ideal clinical scenarios and also critically evaluate the early results achieved.