Certificate of Training for CBCT Practitioners

detailed 3 module program (36 hours) in conformance with SEDENTEX CT – RADIATION PROTECTION N. 172

Background

Due to the differences in basic Dentomaxillofacial Imaging curricula throughout the different universities and different degrees including medical radiology, dental radiology and Imaging technicians, MEDISIS consider it to be essential to include a common basic knowledge, both in radiation protection and dental and maxillofacial radiological anatomy and pathology, as a basic module not only in 2D intraoral and extraoral modalities but as well as volumetric modalities such as CBCT.

Not only the radiation protection principles are transversal to all radiological modalities but also the anatomy and pathology concepts must be understood in both 2D and 3D modalities. Hence our Certificate Program includes a preliminary module (Module 1) with a hands-on session on 2D intraoral and extraoral modalities (4h), besides the radiation protection and anatomical and pathological concepts common to the 2D and CBCT modules (8h) and MUST be completed before the rest of the program for CBCT training for prescribers (Module 2 - 12h) and practitioners (Module 3 - 12h), reaching a total of 36 hours, as described below:

Detailed Program

Module 1	**Theoretical training (4h b-learning)** **(2D and 3D)** Radiation physics in relation to dental imaging equipment - intraoral and extraoral x-ray generators - films, phosphor plates and digital sensors Radiation doses and risks with dental and maxillofacial radiology Radiation protection in relation to intra-oral and extra-oral equipment Head and neck imaging modalities (Intraoral, Panoramic, US, MRI, CT, CBCT) - indications / limitations - justification (referral/ selection criteria) - exam optimization - dose limitation of exposures International guidelines Anatomical planes and landmarks Dental and maxillofacial anatomy Anatomical variations **Exercises and evaluation (4h b-learning)** **(2D and 3D)** Radiation protection planning Image Interpretation Clinical cases and exercises Evaluation **Hand-On (4h)** **(2D only)** Dental, periapical and periodontal pathology IO and EO techniques Errors and artifacts in IO and EO imaging Advanced 2D image interpretation Clinica cases and exercises Evaluation
Module 2	**Theoretical training (4h b-learning)** **(CBCT for prescribers)** Radiation physics in relation to CBCT equipment Radiation doses and risks with CBCT Radiation protection in relation to CBCT equipment - indications / limitations - justification (referral/ selection criteria) - exam optimization - dose limitation of exposures CBCT equipment and apparatus Tomographic principles Exam prescription and indications 3D dental and maxillofacial anatomy 3D anatomical variations

Module 2 (cont)	Basic Imaging interpretation - Cysts and tumours - Traumatic lesions Error and artifacts in CBCT DICOM protocol **Exercises and evaluation (4h b-learning)** DICOM clinical cases and exercises 3D image preparation protocol Evaluation **Hand-On (4h)** Anatomical orientation Multiplanar reconstruction (MPR) Marking and identification of anatomical structures and landmarks Speciality CBCT imaging for: - Implant planning and evaluation - Endodontics - Periodontics - Perinasal sinus and airways - Maxillofacial surgery - TMJ Clinica cases and exercises Evaluation
Module 3	**Theoretical training (4h b-learning)** **(CBCT for practitioners)** Radiation physics and protection of patients and staff Anatomy and pathology revision CBCT Reporting Advanced Imaging interpretation - Cysts and tumours - Traumatic lesions **Exercises and evaluation on-line (4h)** DICOM clinical cases and exercises CBCT Image reporting Evaluation **Hand-On (4h)** Image correction and orientation CBCT techniques and execution - Scout imaging and alignment - Dental and maxillofacial imaging protocols - ENT and airways protocols DICOM import and export Clinica cases and exercises Evaluation

Training facilities

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Course Coordinators

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- Teacher in charge of Dentomaxilofacial Imaging and Information and Communication Technologies curricular units at FMDUL
- University Diploma in Oral and Maxillofacial Implantology, from Créteil Faculty of Medicine - Paris XII - France
- Founding Member of EADMFR – European Academy of Dentomaxilofacial Radiology
- Member at IADMFR- International Association of Dentomaxilofacial Radiology
- Member at ESHNR – European Society of Head and Neck Radiology

Filipa Brazão de Almeida

- Medical Dentist from Faculty of Medical Dentistry - Lisbon University (FMDUL) since 2011
- Teacher in Dentomaxilofacial Imaging in both pre- and post-graduate courses at FMDUL, since 2013
- Member of EADMFR – European Academy of Dentomaxilofacial Radiology
- Member at IADMFR- International Association of Dentomaxilofacial Radiology