

## A TEACHING SYLLABUS FOR THE RADIOLOGICAL ASPECTS OF BREAST CANCER SCREENING USING DIGITAL MAMMOGRAPHY

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Screening with digital mammography is allowed by the Flemish government if the mammography system fulfils the criteria of the European guidelines and if the radiologist is trained with the new modality. A radiologist must achieve 8 accreditation hours: 4 h of theory and 4 h of practical training. The purpose of this study is to discuss the content of our new accreditation program for radiologists reading digital mammograms in a screening setting and to report our first experience with the new course.

The theoretical part of the accreditation program consists of 2 parts: 1/ the technical characteristics of digital mammography and 2/ monitor-side teaching of the radiological aspects of digital mammograms. The course concludes with a practical "hands-on" session.

Radiological aspects included in the course are: the apparent image quality as obtained with different technologies, the appearance of noise and artefacts, the use of image quality criteria to score the quality of the mammograms, the effect of image processing on the visualisation of lesions, the effect of the used monitor (CRT and LCD) and monitor adjustment and the necessity to use tools such as magnification and window-level adjustment.

The practical session consists of reading a large series of well documented digital images on a viewing station.

The databases used in this teaching session included images of various DR and CR systems. A total of 150 patient cases from 5 different systems were used. Of particular interest are mammograms of the same breast acquired or processed with different systems or processing algorithms. Some images are discussed on both soft copy and hard copy to illustrate the differences.

The course was recently organized twice, each time with 25 participants. A questionnaire was sent to the participating radiologists for feedback.

The material is fully digital and can be presented on different platforms. In practice, the need for parallel soft copy reading sessions on high end work stations, not commonly available, limits the number of participants. The development of self-study packages could be a future solution.

A high level of interactivity was noted between teacher and participant, with a thorough discussion of (technical) parameters with impact on image quality. The radiologists appreciated the detailed information on different systems during a single teaching course.

The main challenge for the teacher turned out to be the collection of representative material and to keep the material updated: new systems, processing techniques and artefacts are to be included regularly. In the future, these cases could be expanded with simulated lesions, if their appearance is sufficiently validated against real lesions.

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