

Update on Determining Technical Factors

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Regarding my article "Setting up a Technique Chart" in the MPI Dynamic Chiropractic issue of June 18, 1993, I heard from the Radiological Health Committee of the American Chiropractic Association and the American Chiropractic College of Radiology, and you may wish to consider some of their suggestions as follows:

An excellent choice for an x-ray technique calculator is one that comes with an acrylic penetrometer (for those who purchase the complete kit). The express purpose of the penetrometer is to perform a series of x-ray exposures on your x-ray system (that includes the generator, tube, collimator, screens/film, and processing) to determine the ability of your system to blacken a film. This information is then compared to a standardized set of exposure densities. From this comparison comes a total correction factor which is used in determining optimal radiographic exposures for virtually any body part. The beauty of such a system is that it permits the physician and their technologists to utilize equipment that may be temporarily out of calibration (where mA is nonlinear).

You might wish to request assistance from film manufacturers (where permitted by law). Generally, upon request, reputable manufacturers will send their personnel on-site to expose anthropomorphic or water phantoms. This exposure information is then sent to the parent company and a computerized exposure chart is produced which is specific for that office, x-ray that this service is free for the continued use of that manufacturer's film products. In our experience, if this type of chart does not produce consistently good results, it is more likely a problem related to the calibration of the x-ray generator or processing problems, such as improper temperature for development or inaccurate replenishment rates.

Lastly, it should be noted that some of the new high-frequency equipment offers preprogrammed exposure techniques as an option with the added benefit of reduced patient exposure.

Hopefully, these suggestions will assist those needing to improve their exposure techniques. If you have further questions you may wish to contact the American Chiropractic College of Radiology, your local diplomate of the American Chiropractic Board of Radiology, your local medical or health physicist, or your state regulatory agency.

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