

In mammography, it is most important to consistently produce high contrast, high resolution, low noise images at the lowest radiation dose consistent with high image quality. Technical developments due to x-ray equipment, image recording systems, film processing and viewing conditions will be presented. Factors affecting image quality (contrast, image blue, noise, artifacts) and radiation dose will be reviewed. A recent study based on data from the American College of Radiology Accreditation Program (ACR MAP) demonstrating the relationship between phantom failure rates (fibers, masses, specks) and mean glandular radiation dose will be discussed. The data to be presented indicate that image quality in mammography as assessed by phantom failure rates in the ACR MAP depends on the radiation dose used.

Educational Objectives

1. Learn about the physical and imaging characteristics of x-ray equipment, grids, image receptors, and film processing systems used for mammography.
2. Understand how image quality (contrast, blur, and noise) and radiation dose are affected by the x-ray equipment, grids, image receptors and film processing systems. Understand the importance of proper viewing conditions.
3. Understand how image quality as assessed by phantom failure rates in the ACR MAP depends on radiation dose.