

## Film Storage

### Proper film storage is required for high-quality, long-lasting images

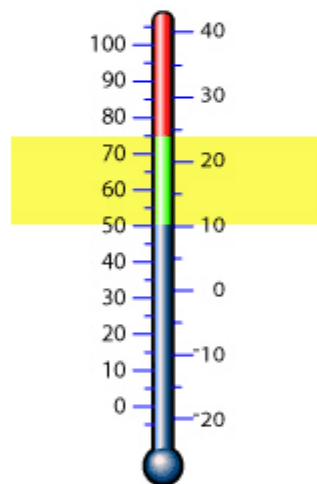
Quality assurance in mammography typically refers to the 11 quality control tests radiologic technologists are required to perform. But there are other important factors necessary for high-quality, long-lasting images. One commonly overlooked consideration is how both unprocessed and processed film is stored. Since improper storage can seriously compromise the quality and stability of an image, the importance of careful storage and handling cannot be over-emphasized. Here are some useful tips for storing unprocessed and processed film:

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#### Storage of Unprocessed/Unexposed Film

Most medical x-ray films come in a sealed, moisture-proof inner wrap which is packed in an outer cardboard box. Sealed packages of film are affected by heat; open packages are affected by both heat and humidity.

- Keep all packages away from heat sources; store in a cool, dry place at a temperature between 50° and 75°F (10° to 24°C). Keep opened packages of film at a relative humidity between 30% and 50 percent. An inexpensive instrument called a sling psychrometer can be used to measure relative humidity. This instrument is commonly available through precision instrument supply houses.
- Avoid storing near chemical fumes, which can fog film. Radiation from x-ray machines or radioactive materials can also damage film.
- Packages of sheet film should be stored on edge (like books in a library). This allows for easy rotation of inventory. Always use older films first. The film's expiration date is printed on both the box's front and side so the date is still visible when the boxes are stored on edge.
- DO NOT stack boxes of film horizontally because film on the bottom may show pressure artifacts by being weighted down by other boxes or cases of film.



For storage of processed and unprocessed film.

#### Storage of Processed Film

Proper storage and handling of processed film is imperative for stability of the radiographic image. It's especially important to treat single-emulsion mammography film with great care—the same care you would give to your most treasured family photographs.

- Film must be thoroughly washed during processing to remove residual fixer, which can cause staining and fading. Tests for fixer retention should be done at least every three months. For complete information, refer to the 1999 American College of Radiology (ACR) **Quality Control Manual** or contact your local Kodak account manager.
- Keep film clean, avoiding fingerprints, dirt, dust, and contact with any photographic materials, which can contain chemicals or fungus spores.
- Since all photographic films contain gelatin as one of the principal ingredients of their emulsion, **it is important to maintain a constant temperature at about 70°F (21°C) and 40 to 60 percent relative humidity.**
- Subjecting radiographs to humidity below 30 percent and/or high temperatures can occasionally lead to emulsion cracking, an artifact that appears as a series of parallel lines in a D-max area of the film. This artifact can be avoided by storing film at constant temperatures and humidity, not overexposing film to "hot-lighting," and using only the recommended bulb wattage for hot lights.