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AP/IM Reflection #1

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A collimator on an x-ray tube is an adjustable lead shutter that shapes and limits the x-ray beam, to focus directly on a specific patient body part. It is very crucial in reducing scatter radiation, when there is less scatter there is better contrast in the image. Collimation is the most common method of beam restriction. Beam restriction controls the size and shape of the x-ray beam. Collimation uses the lead shutters inside on the tube housing to shape the beam. You can use the collimator as is or you can use cones or cylinders to help limit the beam field. It can become smaller or larger depending on the area of focus. Typically shaped as a square or rectangle. Collimation improves contrast, protects the patient from unnecessary radiation and helps with getting the correct positioning. There is a light field that will show exactly where the beam will hit, giving you a cross and often a red laser to ensure perfect positioning of your patient.

Important benefits of using a collimator. It minimizes patient radiation dose, it prevents surrounding tissues from being exposed. This protects patient health. Less radiation means lower risk of radiation-induced side effects, especially in children. It improves radiographic image quality. When you reduce the field, it reduces matter which then reduces scatter radiation. It enhances contrast and sharpness in the final image. It supports ALARA, as low as reasonably achievable. Which is a very important guideline in radiation safety.