Shielding in Computed Tomography

Student Researcher: Amanda Agne, Faculty Advisor: Dr. Halesey Ed.D, R.T.(R)(QM)(ARRT)

**Abstract**

This project evaluates the controversy of shielding in computed tomography (CT). Before optimization of equipment and technological advances, shielding patients was a common practice in radiology. Computed tomography provides a higher dose of radiation than diagnostic x-ray and should still be considered a practice in procedures where applicable. The project discusses anatomical regions with the highest radiosensitivity and are at risk for exposure during CT imaging. These areas include the lenses of the eyes, breasts, and thyroid. There is also a consideration for shielding pediatric patients as their bodies are overall more radiosensitive than an adult patient. Research has shown that shielding patients will continue to reduce patient dose by minimal amounts. Newer scanners and protocols are constructed to use faster scan times and provide lowest dose possible while obtaining optimal image quality. Proper training and education of technologists is key in reducing dose to patients. Therefore, the topic is heavily debated due to alternative methods and risks outweighing the benefits, but there will always be a risk when ionizing radiation imaging is used.

*Keywords:* computed tomography, shielding, internal scatter, radiosensitive organs, dose