

CTDI Verification with OSL Dosimeters

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Purpose: The goal of our research is to determine the viability of optically stimulated luminescent (OSL) dosimeters in verifying the reported CTDI_{vol} from CT scanners.

Methods & Materials: We used a Siemens Somatom Sensation 16 slice scanner, a CTDI phantom, aluminum oxide (Al₂O₃:C) OSL nanoDot dosimeters read by the Landauer InLight® microStar system, and an ion chamber with an RTI Barracuda control unit. Exposures were made with routine adult head and abdomen protocols, since these have specific ACR recommendations, for the full length of the phantom. Dosimeters were placed in the middle of the phantom at the 12, 3, 6, and 9 clock positions, as well as the center. **Results:** We found the doses measured by the nanoDots to be higher than what was reported by the scanner, but closer than what was measured by the ion chamber, which was lower. **Conclusion:** We plan further study of the ability to use nanoDots with other protocols where the CTDI phantom could be used.