**FORMAT**

TITLE OF THE ABSTRACT : Estimation of regional anatomical dimensions of the adult and pediatric Indian population from Computed Tomography to generate reference values for radiation dosimetric calculations

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OBJECTIVES:

1) To estimate the anatomical dimensions of the head, thorax and abdomen of the adult and pediatric Indian population from Computer Tomograms (CTs).

2) To generate reference values in relation to age and gender for dosimetric calculations in the adult and pediatric population in India for radiation protection purposes.

METHODS: CT scans of Brain, thorax and abdomen which included 1080 children (stratified according to age) and 1500 adults (equal representation of males and females) were studied. For each of the regions studied, Scan length, Antero-posterior (AP) and Lateral distances were measured from topographic images and tomographic images at specific anatomical levels. Using AP and lateral distances, effective diameter was calculated. Effective diameter is related to the surface area of the cross section of the

region. Reference phantoms for CT Brain, thorax and abdomen ware constructed from the scan length and effective diameter obtained.

RESULTS: The range of the scan length for children to adults, for CT Brain, thorax and abdomen/pelvis, was from 82.4-217 mm, 72.63-366.98 mm and 99.27-420.39 mm respectively.

The range of the effective diameter for children to adults, at the level of eyeball, lateral ventricle, upper thorax, carina of trachea, base of lung, upper abdomen and iliac crest was from 120-160 mm, 140- 158 mm, 133-243 mm, 144-268 mm, 148-264 mm, 136-233 mm and 124-220 mm respectively.

**Keywords:** topographic image, tomographic image, scan length, effective diameter, phantom, reference values.