

## Cadaveric Assessment of Kidney Dimensions Among Nigerians - A Preliminary Report

**Authors :** Rotimi Sunday Ajani, Omowumi Femi-Akinlosotu

**Abstract :** Background: The usually paired human kidneys are retroperitoneal urinary organs with some endocrine functions. Standard text books of anatomy ascribe single value to each of the dimension of length, width and thickness. Research questions: These values do not give consideration to racial and genetic variability in human morphology. They may thus be erroneous to students and clinicians working on Nigerians. Objectives: The study aimed at establishing reference values of the kidney length, width and thickness for Nigerians using the cadaveric model. Methodology: The length, width, thickness and weight of sixty kidneys harvested from cadavers of thirty adult Nigerians (Male: Female; 27: 3) were measured. Respective volume was calculated using the ellipsoid formula. Results: The mean length of the kidney was  $9.84 \pm 0.89$  cm ( $9.63 \pm 0.88$  {right};  $10.06 \pm 0.86$  {left}), width-  $5.18 \pm 0.70$  cm ( $5.21 \pm 0.72$  {right};  $5.14 \pm 0.70$  {left}), thickness- $3.45 \pm 0.56$  cm ( $3.36 \pm 0.58$  {right},  $3.53 \pm 0.55$  {left}), weight- $125.06 \pm 22.34$  g ( $122.36 \pm 21.70$  {right};  $127.76 \pm 24.02$  {left}) and volume of  $95.45 \pm 24.40$  cm<sup>3</sup> ( $91.73 \pm 26.84$  {right};  $99.17 \pm 25.75$  {left}). Discussion: Though the values of the parameters measured were higher for the left kidney (except for the width), they were not statistically significant. The various parameters obtained by this study differ from those of similar studies from other continents. Conclusion: Stating single value for each of the parameter of length, width and thickness of the kidney as currently obtained in textbooks of anatomy may be incomplete information and hence misleading. Thus, there is the need to emphasize racial differences when stating the normal values of kidney dimensions in textbooks of anatomy. Implication for Research and Innovation: The results of the study showed the dimensions of the kidney (length, width and thickness) have interracial vagaries as they were different from those of similar studies and values stated in standard textbooks of human anatomy. Future direction: This is a preliminary report and the study will continue so that more data will be obtained.

**Keywords :** kidney dimensions, cadaveric estimation, adult nigerians, racial differences

**Conference Title :** ICHAP 2023 : International Conference on Human Anatomy and Physiology

**Conference Location :** Toronto, Canada

**Conference Dates :** July 10-11, 2023