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## Accuracy of the weight-for-age index in identifying obese children in the emergency setting

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**Background:** Obesity has been defined as weight-for-age >95<sup>th</sup> percentile for research/clinical settings like the emergency department where height is not routinely available.

**Objective:** Our main objective was to determine the sensitivity of weight-for-age >95<sup>th</sup> percentile in identifying obesity, using Body Mass Index (BMI)-for-age >95<sup>th</sup> percentile as the reference standard. We also determined the specificity, and predictive values, and the correlation between weight and BMI-for-age values.

**Methods:** This was a cross-sectional study with prospectively collected data conducted at two urban, tertiary care pediatric emergency departments in Canada. Children between 2 and 17 years of age with acute extremity injuries were enrolled.

**Results:** of the 2259 participants, 1283 (56.1%) were male and the mean (SD) age was 9.5 (4.1) years. Using weight-for-age >95<sup>th</sup> percentile, 326 [14.3% (12.9, 15.7)] were classified as obese, while using BMI-for-age >95<sup>th</sup> percentile criteria determined that 363 [16.1% (14.6, 17.7)] were obese,  $p < 0.0001$ . The sensitivity (95% CI) of weight-for-age >95<sup>th</sup> percentile to identify obesity was 62.2% (57.0, 67.2). The specificity, positive and negative predictive values were 94.5% (93.6, 95.6), 14.4% (13.0, 16.0), and 85.6% (84.0, 87.0), respectively. The correlation between BMI and weight-for-age was 0.71 (0.68, 0.73).

**Conclusion:** Although there may be limited validity in using this weight-for-age cut-off as a definition for obesity in research that includes children with acute injuries, the high specificity may provide some clinical utility in identifying two-thirds of children who are obese while minimizing false labeling of this condition.

### Biography

Reetika Tripathi is currently in final year of undergraduate studies at the University of Toronto where she is pursuing a major in Health and Disease as well as a minor in French and Italian. Her interest in this pediatric obesity research had been ignited by a two-year research project that she worked on in collaboration with several Pediatric Emergency Physicians at the Hospital for Sick Children & British Columbia Children's Hospital, entitled "Bone Fractures in Children - Is There an Association with Obesity?"

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