

## The Impact of Obesity on Mortality Rates in The ICU

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The obesity epidemic among children and adolescents is not new. What is new is research that suggests the impact of obesity and excess weight can have adverse consequences on mortality in the intensive care unit.

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The obesity epidemic among children and adolescents is not new. What is new is research that suggests the impact of obesity and excess weight can have adverse consequences on mortality in the intensive care unit. Obese children are more likely to die if they develop an illness or injury that lands them in the intensive care unit according to new research from Ross et al. ([10.1542/peds.2015-2035](#))

Researchers at Children's Hospital of Los Angeles used data in the Virtual PICU research database to assess the mortality among 127,607 children admitted between 2009 and 2013. A total of 127,607 children were included in the study and 2.48% died. Data elements in the PICU data bases included , mortality, anthropomorphic data, primary diagnosis and secondary diagnoses and a Pediatric Index of Mortality (PIM) score. The PIM is a quantitative index of mortality used in statistical modeling for studies involving children admitted to intensive care units.

The secondary diagnoses were coded in the complex chronic conditions (CCC) and non-complex chronic conditions. That permitted the researchers to control for pre-existing conditions, such as genetic diseases, which may confound the relationship between body habitus and mortality. The researchers used height, weight, age and gender to calculate z scores from the growth curves for children developed by the Centers for Disease Control and World Health Organization. Standardized mortality ratios were calculated for each Z-score group.

The Z-scores were used in regression modeling to examine the association between obesity and PICU mortality and controlled for hospital, initial severity of illness and comorbidities. An important element of the study was the inclusion of height data in the analysis, which permitted a more precise classification of mortality using weight for height/body mass index (BMI). The researchers found a significant increase in PICU mortality in patients in the overweight and obese ranges. In other research where height has not been included, studies have suggested a protective benefit from mild obesity. The increased risk of death in overweight children started at > 1 year of age.

This study is an important one in adding height for weight/BMI in calculating the mortality and for the realization that consequences of obesity aren't just high blood pressure or diabetes that may affect a child's health later in life. The consequences of obesity can occur early in life and if an obese child is critically ill, could result in an increased risk of mortality.

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