Introduction: Body weight measurement is of critical importance when evaluating the nutritional status of patients entering a hospital. In some situations, such as the case of patients who are bedridden or in wheelchairs, these measurements cannot be obtained using standardized methods. We have designed and validated a formula for predicting body weight. Objectives: To design and validate a formula for predicting body weight using circumference-based equations. Methods: The following anthropometric measurements were taken for a sample of 76 patients: weight (kg), calf circumference, average arm circumference, waist circumference, hip circumference, wrist circumference and demispan. All circumferences were taken in centimetres (cm), and gender and age were taken into account. This equation was validated in 85 individuals from a different population. The correlation with the new equation was analyzed and compared to a previously validated method. Results: The equation for weight prediction was the following: Weight = 0.524 (WC) – 0.176 (age) + 0.484 (HC) + 0.613 (DS) + 0.704 (CC) + 2.75 (WrC) – 3.330 (if female) - 140.87. The correlation coefficient was 0.96 for the total group of patients, 0.971 for men and 0.961 for women (p < 0.0001 for all measurements). Conclusion: The equation we developed is accurate and can be used to estimate body weight in overweight and/or obese patients with mobility problems, such as bedridden patients or patients in wheelchairs.

Keywords