Obesity continues to be a health epidemic of the industrialized world, and is associated with substantial morbidity and mortality. Obesity has pathophysiologic effects upon all major organ systems. In adults, use of two-dimensional ultrasound guidance for cannulation of the internal jugular and femoral veins unequivocally decreases the risk of failed catheter placement, improves first-pass success, and facilitates faster placement compared with the landmark method traditionally used to guide placement are often obscured. In adults, use of two-dimensional ultrasound guidance for cannulation of the internal jugular and femoral veins unequivocally decreases the risk of failed catheter placement, improves first-pass success, and facilitates faster placement compared with the landmark method traditionally used to guide placement are often obscured.

Obesity is an independent risk factor for development of venous thromboembolism (VTE). It is reported to be the most common cause of postoperative mortality after bariatric surgery, accounting for as many as 50% of all deaths. In a study of bariatric surgical patients, those administered enoxaparin 40mg every 12 h had a lower incidence of postoperative deep venous thrombosis compared with those receiving 30mg twice daily. Bleeding events were no different between groups. Enoxaparin dosed 1.5mg/kg once or 1mg/kg twice daily in obese patients did not result in supratherapeutic anti-Xa activity, thus supporting the safety of the higher dosing regimen. Two lower weight-based doses of nadroparin and tinzaparin have also been studied. Fixed doses of nadroparin given once daily at a dose of 5700 IU appear safe and offer the same benefits as higher dosing regimens. In contrast, weight-based dosing of tinzaparin yields a predictable response regardless of body weight and can be dosed on TBW without a maximal absolute dose.

In critically ill obese patients, the metabolic response to injury has not been specifically quantitated in obese patients. The number of patients was small with the largest study including only 40 patients. Nutrition studies have examined the use of hyperalimentation in critically ill obese patients. The number of patients was small with the largest study including only 40 patients. Nutrition delivery was anywhere from 3 to 36 kcal/kg/day (IBW) rather than total body weight (TBW) to avoid dangerously high airway pressures and potential barotraumas, prophylactic application of positive end-expiratory pressure up to 15cm H2O to improve oxygenation, and the use of reverse Trendelenburg position at 45 degrees rather than conventional upright positioning at 90 degrees to facilitate weaning.

The metabolic response to injury has not been specifically quantitated in obese individuals. The elevated levels of stress hormones, which result in a catecholamine state, are, however, thought to be similar between obese and nonobese. Basic metabolic needs are difficult to estimate. Equations such as the Harris-Benedict equation are commonplace and include weight as a variable. However, whether to use actual body weight (ABW) or IBW remains contentious. The metabolic response to injury has not been specifically quantitated in obese individuals. The elevated levels of stress hormones, which result in a catecholamine state, are, however, thought to be similar between obese and nonobese. Basic metabolic needs are difficult to estimate. Equations such as the Harris-Benedict equation are commonplace and include weight as a variable. However, whether to use actual body weight (ABW) or IBW remains contentious.

Among general medical/surgical ICU patients, the morbidity obese are reported to suffer higher mortality, greater duration of mechanical ventilation and length of stay when compared to the nonobese. Obesity is also reported to be an independent predictor of poor outcomes in the ICU. In a surgical ICU, investigators reported that morbid obesity conferred elevated odds of death after 4 days of ICU stay and among blunt trauma patients, obese patients incurred more frequent complications (multiple system organ failure, acute respiratory distress syndrome, myocardial infarction and renal failure), involving the need for more vasopressors, additional days of ventilator support and more often failed extubation. In cardiac patients, outcomes appear to be unaffected by obesity. After coronary artery bypass graft surgery, early outcomes (death, postoperative myocardial infarction, infectious, respiratory, renal or neurological complications) were no different between the obese and nonobese. Ventilator days and length of stay, both ICU and in-hospital, were also similar, and results from a post hoc analysis of a large angioplasty registry showed only the obese patients had higher risk of mortality and subsequent cardiac events.

Obesity continues to be a health epidemic of the industrialized world, and is associated with substantial morbidity and mortality. Obesity has pathophysiologic effects upon all major organ systems. The unique pathophysiology associated with obesity is necessary to deliver effective care.