

The administration of **exogenous surfactant** to preterm neonates with RDS has become an accepted and common therapy in most neonatal centers worldwide. Numerous clinical trials involving the administration of exogenous surfactant to infants with or at high risk for RDS demonstrate improvements in blood gas values and ventilator settings, decreased incidence of pulmonary air leaks, intraventricular hemorrhage, decreased deaths from RDS, and an overall decreased infant mortality rate ([Polin, Carlo, and American Academy of Pediatrics, Committee on Fetus and Newborn, 2014](#); [Speer, Sweet, and Halliday, 2013](#)). The overall rates of some associated comorbidities (bronchopulmonary dysplasia, NEC, patent ductus arteriosus) have not decreased with surfactant replacement. Currently, exogenous surfactant is derived from a natural source (e.g., porcine, bovine).

Surfactant therapy is also being used in infants with meconium aspiration, infectious pneumonia, sepsis, persistent pulmonary hypertension, and congenital diaphragmatic hernia ([Polin, Carlo, and American Academy of Pediatrics, Committee on Fetus and Newborn, 2014](#)). Surfactant may be administered at birth as a preventive or prophylactic treatment of RDS or later on in the course of RDS as a rescue treatment; however, research has demonstrated improved clinical outcomes and fewer adverse effects when surfactant is administered prophylactically to infants at risk for developing RDS ([Polin, Carlo, and American Academy of Pediatrics, Committee on Fetus and Newborn, 2014](#)). Surfactant is administered via an endotracheal (ET) tube directly into the infant's trachea. Complications seen with surfactant administration include pulmonary hemorrhage and mucous plugging. Nursing responsibilities with surfactant administration include assistance in the delivery of the product, collection and monitoring of blood gases, scrupulous monitoring of oxygenation with pulse oximetry, and assessment of the infant's tolerance of the procedure. After surfactant is absorbed, there is usually an increase in respiratory compliance that requires adjustment of ventilator settings to decrease mean airway pressure and prevent overinflation or hyperoxemia. Suctioning is usually delayed for an hour or so (depending on the type of surfactant and unit protocol) to allow maximum effects to occur. Studies have shown the benefit of administering surfactant early (prophylactic) in infants at risk for