Information on drug absorption and disposition in infants and children has increased considerably over the past 2 decades. However, the impact of specific age-related effects on pharmacokinetics, pharmacodynamics, and dose requirements remains poorly understood. Absorption can be affected by the differences in gastric pH and stomach emptying time that have been observed in the pediatric population. Low plasma protein concentrations and a higher body water composition can change drug distribution. Metabolic processes are often immature at birth, which can lead to a reduced clearance and a prolonged half-life for those drugs for which metabolism is a significant mechanism for elimination. Renal excretion is also reduced in neonates due to immature glomerular filtration, tubular secretion, and reabsorption. Limited data are available on the pharmacodynamic behavior of drugs in the pediatric population. Understanding these age effects provide a mechanistic way to identify initial doses for the pediatric population. The various factors that impact pharmacokinetics and pharmacodynamics mature towards adult values at different rates, thus requiring continual modification of drug dose regimens in neonates, infants, and children. In this paper, the age-related changes in drug absorption, distribution, metabolism, and elimination in infants and children are reviewed, and the age-related dosing regimens for this population are discussed.
Arrhythmogenic Antitussive: A Case of Pediatric Benzonatate Overdose With Torsades de Pointes, Cardiac Arrest, and Complete Recovery Without Neurologic Deficits
Mary Billington, MD, Jakub Furmaga, MD, Thomas Schaeffer, MD

Transitioning From Intravenous to Subcutaneous Prostacyclin Therapy in Neonates With Severe Pulmonary Hypertension
Meghan N. Turbenson, PharmD, John J. Radosevich, PharmD, Vinit Manuel, MD, Jeremy Feldman, MD

Infantile Hemangioma: A Review of Current Pharmacotherapy Treatment and Practice Pearls
Laura Tiemann, PharmD, Sarrah Hein, PharmD