

of subcutaneous fat and the amount of tape used to secure the catheter often obscure the early signs of infiltration. When the fluid appears to be infusing too slowly or ceases, the usual assessment for obstruction within the apparatus—kinks, screw clamps, shutoff valve, and positioning interference (e.g., a bent elbow)—often locates the difficulty. When these actions fail to detect the problem, it may be necessary to carefully remove some of the dressing to obtain a clear view of the venipuncture site. Dependent areas, such as the palm and undersides of the extremity or the occiput and behind the ears, are examined.

Whenever possible, the IV infusion should be placed in an extremity to which the ID band (or bracelet) is not attached. Serious circulatory impairment can result from infiltrated solution distal to the band, which acts as a tourniquet, preventing adequate venous return. To check for return blood flow through the catheter, the tubing is removed from the infusion pump, and the bag is lowered below the level of the infusion site. Resistance during flushing or aspiration for blood return also indicates that the IV infusion may have infiltrated surrounding tissue. A good blood return, or lack thereof, is not always an indicator of infiltration in small infants. Flushing the catheter and observing for edema, redness, or streaking along the vein are appropriate for assessment of the IV.

IV therapy in pediatrics tends to be difficult to maintain because of mechanical factors such as vascular trauma resulting from the catheter, the insertion site, vessel size, vessel fragility, pump pressure, the patient's activity level, operator skill and insertion technique, forceful administration of boluses of fluid, and infusion of irritants or vesicants through a small vessel. These factors cause infiltration and extravasation injuries. **Infiltration** is defined as inadvertent administration of a non-vesicant solution or medication into surrounding tissue. **Extravasation** is defined as inadvertent administration of vesicant solution or medication into surrounding tissue ([Infusion Nurses Society, 2011](#)). A **vesicant** or **sclerosing agent** causes varying degrees of cellular damage when even minute amounts escape into surrounding tissue. Guidelines are available for determining the severity of tissue injury by staging characteristics, such as the amount of redness, blanching, the amount of swelling, pain, the quality of pulses below infiltration, capillary refill, and warmth or coolness of the area ([Infusion Nurses](#)