

Narcotic withdrawal

Degenerative disease

Benign familial neonatal seizures

The features of neonatal seizures are different from those observed in older infants and children. For example, the well-organized, generalized tonic-clonic seizures seen in older children are rare in infants, especially preterm infants. The newborn brain, with its immature anatomic and physiologic status and less cortical organization, is unable to allow ready development and maintenance of a generalized seizure. Instead, signs of seizures in newborns, especially preterm neonates, are subtle and include findings such as lip smacking, tongue thrusting, eye rolling, and swimming movements ([Verklan and Lopez, 2011](#)).

Jitteriness or tremulousness in newborns is a repetitive shaking of an extremity or extremities that may be observed with crying, occur with changes in sleeping state, or is elicited with stimulation. Jitteriness is relatively common in newborns and in a mild degree may be considered normal during the first 4 days of life. Jitteriness can be distinguished from seizures by several characteristics:

- Jitteriness is not accompanied by ocular movement as are seizures.
- Whereas the dominant movement in jitteriness is tremor, seizure movement is clonic jerking that cannot be stopped by flexion of the affected limb.
- Jitteriness is highly sensitive to stimulation, but seizures are not.

Jitteriness may be a sign of hypoglycemia, and infants with jitteriness should have a blood glucose level evaluated.

A **tremor** is defined as repetitive movements of both hands (with or without movement of legs or jaws) at a frequency of two to five per second and lasting more than 10 minutes. It is common in newborn infants and has a variety of causes, including neurologic damage, hypoglycemia, and hypocalcemia. In most instances, tremors are of no pathologic significance.

Neonatal seizures can be divided into four major types. These classifications are outlined in order of frequency in [Table 8-11](#) and