

take 24 to 48 hours when older types of plaster materials are used. Drying occurs within minutes with fiberglass cast material. The cast must remain uncovered to allow it to dry from the inside out. Turning the child in a plaster cast at least every 2 hours will help to dry a body cast evenly and prevent complications related to immobility. A regular fan or cool-air hair dryer to circulate air may be helpful when the humidity is high.

Nursing Alert

Heated fans or dryers are not used because they cause the cast to dry on the outside and remain wet beneath or cause burns from heat conduction by way of the cast to the underlying tissue.

A wet plaster cast should be supported by a pillow that is covered with plastic and handled by the palms of the hands to prevent indenting the cast, which can create pressure areas. A dry plaster-of-Paris cast produces a hollow sound when it is tapped with the finger. After it has dried, “hot spots” felt on the cast surface or a foul-smelling odor may indicate an infection. This should be reported for further evaluation, and if concern continues, an opening, or a “window,” may be exposed over the area of concern to evaluate the site.

During the first few hours after a cast is applied, the chief concern is that the extremity may continue to swell to the extent that the cast becomes a tourniquet, shutting off circulation and producing neurovascular complications (**compartment syndrome**) (see [Box 29-3](#)). To reduce the likelihood of this potential problem, the body part can be elevated, thereby increasing venous return. If edema is excessive, casts are bivalved (i.e., cut to make anterior and posterior halves that are held together with an elastic bandage). The cast and the involved extremity are observed frequently for neurovascular integrity and any signs of compromise. Permanent muscle and tissue damage can occur within a few hours.

Nursing Alert

Observations such as pain (unrelieved by pain medication 1 hour after administration, especially with passive range of motion), swelling, discoloration (pallor or cyanosis) of the exposed portions,