Selection of Cuff

No matter what type of noninvasive technique is used, the most important factor in accurately measuring BP is the use of an appropriately sized cuff (**cuff size** refers only to the inner inflatable bladder, not the cloth covering). A technique to establish an appropriate cuff size is to choose a cuff with a bladder width that is at least 40% of the arm circumference midway between the olecranon and the acromion (see Research Focus box). This will usually be a cuff bladder that covers 80% to 100% of the circumference of the arm (Fig. 4-12). Cuffs that are either too narrow or too wide affect the accuracy of BP measurements. If the cuff size is too small, the reading on the device is falsely high. If the cuff size is too large, the reading is falsely low.

Research Focus

Selection of a Blood Pressure Cuff

Researchers have found that selection of a cuff with a bladder width equal to 40% of the upper arm circumference most accurately reflects directly measured radial arterial pressure (Clark, Kieh-Lai, Sarnaik, et al, 2002).

Using limb circumference for selecting cuff width more accurately reflects direct arterial blood pressure (BP) than using limb length because this method takes into account variations in arm thickness and the amount of pressure required to compress the artery. For measurement on sites other than the upper arms, use the limb circumference, although the shape of the limb (e.g., conical shape of the thigh) may prevent appropriate placement of the cuff and inaccurately reflect intraarterial BP (Table 4-5).

When using a site other than the arm, BP measurements using noninvasive techniques may differ. Generally, systolic pressure in the lower extremities (thigh or calf) is greater than pressure in the upper extremities, and systolic BP in the calf is higher than that in the thigh (Schell, Briening, Lebet, et al, 2011) (Fig. 4-13).

Nursing Alert

When taking blood pressure (BP), use an appropriately sized cuff.