are used, the fingers and thumb are held together and flexed slightly to form a cup, as one would to scoop up water. Percussion over congested lung areas can mechanically dislodge tenacious secretions from the bronchial walls. Cupped hands trap the air against the chest. The trapped air sets up vibrations through the chest wall to the secretions.

To percuss a client’s chest, the nurse follows these steps:
- Cover the area with a towel or gown to reduce discomfort.
- Ask the client to breathe slowly and deeply to promote relaxation.
- Alternately flex and extend the wrists rapidly to slap the chest (Figure 50-6).  
- Percuss each affected lung segment for 1 to 2 minutes.

When done correctly, the percussion action should produce a hollow, popping sound. Percussion is avoided over the breasts, sternum, spinal column, and kidneys.

To use an Incentive Spirometer:
- Hold or place the spirometer in an upright position. A tilted flow-oriented device requires less effort to raise the balls or discs; a volume-oriented device will not function correctly unless upright.
- Exhale normally.
- Seal the lips tightly around the mouthpiece.
- Take in a slow, deep breath to elevate the balls or cylinder, and then hold the breath for 2 seconds initially, increasing to 6 seconds (optimum), to keep the balls or cylinder elevated if possible.
- For a flow-oriented device, avoid brisk, low-volume breaths that snap the balls to the top of the chamber. Greater lung expansion is achieved with a very slow inspiration than with a brisk, shallow breath, even though it may not elevate the balls or keep them elevated while you hold your breath. Sustained elevation of the balls or cylinder ensures adequate ventilation of the alveoli (lung air sacs).
- If you have difficulty breathing only through the mouth, a nose clip can be used.
- Remove the mouthpiece and exhale normally.
- Cough after the incentive effort. Deep ventilation may loosen secretions, and coughing can facilitate their removal.
- Relax and take several normal breaths before using the spirometer again.
- Repeat the procedure several times and then four or five times hourly. Practice increases inspiratory volume, maintains alveolar ventilation, and prevents atelectasis (collapse of the air sacs).
- Clean the mouthpiece with water and shake it dry.

When done correctly, the percussion action should produce a hollow, popping sound. Percussion is avoided over the breasts, sternum, spinal column, and kidneys.

Figure 50-6 Percussing the upper posterior chest.