Helping your patient use incentive spirometry

- Explain the reason and objective for the therapy: the inspired air helps to inflate the lungs. The ball or weight in the spirometer will rise in response to the intensity of the intake of air. The higher the ball rises, the deeper the breath.
- Assess the patient’s level of pain and administer pain medication if prescribed.
- Position the patient in semi-Fowler’s position or in an upright position (although any position is acceptable).
- Demonstrate how to use diaphragmatic breathing.
- Instruct the patient to place the mouthpiece of the spirometer firmly in his mouth, to breathe air in, and to hold the breath at the end of inspiration for about 3 seconds, and then to exhale slowly.
- Encourage the patient to perform the procedure about 10 times in succession, repeating the 10 breaths with the spirometer each hour during waking hours.
- Set a reasonable volume and repetition goal (to encourage the patient and give him a sense of accomplishment).
- Encourage coughing during and after each session.
- Assist the patient to splint the incision when coughing postoperatively.
- Place the spirometer within his easy reach.
- For the postoperative patient, begin the therapy immediately. (If the patient begins to hypoventilate, atelectasis can start to develop within an hour.)
- Record how effectively the patient performs the therapy and the number of breaths achieved with the spirometer every 2 hours.

Preoperative instructions to prevent postoperative complications

Among the goals of preoperative nursing care is teaching your patient about how to promote optimal lung expansion and consequent blood oxygenation after anesthesia and about the importance of mobility.

For example, you’ll teach him how to practice deep breathing and coughing, explaining that the goal is to mobilize secretions so that they can be removed and that deep breathing before coughing stimulates the cough reflex. You’ll also show him how to use an incentive spirometer, a device that provides measurement and feedback related to breathing effectiveness. If he’ll have a thoracic or abdominal incision, you’ll show him how to splint the incision to minimize pressure and control pain. Remind him to take his pain medications regularly so pain doesn’t keep him from doing effective deep-breathing and coughing exercise.

The goals of promoting mobility postoperatively are to improve circulation, prevent venous stasis, and promote optimal respiratory function. Explain the rationale for frequent position changes after surgery and show your patient how to turn from side to side and how to assume the lateral position without causing pain or disrupting I.V. lines, drainage tubes, or other equipment. You’ll discuss any special position the patient needs to maintain after surgery (such as adducting or elevating an extremity) and explain the importance of maintaining as much mobility as possible despite restrictions. Exercising the extremities will help maintain muscle tone so that ambulation will be easier.

Share the patient-teaching information on the next page with your patients.
PATIENT TEACHING

Diaphragmatic breathing
Diaphragmatic breathing refers to a flattening of the dome of the dia-
phragm as you inhale; your upper abdomen enlarges as air rushes in. 
During expiration, your abdominal 
muscles contract. 
1. Practice in the same position 
you’d assume in bed after surgery: 
a semi-Fowler’s position, propped 
in bed with the back and shoulders 
well supported with pillows. 
2. With your hands in a loose-
fist position, let them rest lightly on 
the front of your lower ribs, with 
your fingertips against your lower chest to feel the movement. 
3. Breathe out gently and fully as your ribs sink down and inward 
toward the center of your chest. 
4. Then take a deep breath through your nose and mouth, letting 
your abdomen rise as your lungs fill with air. 
5. Hold this breath for a count of five. 
6. Exhale and let out all the air through your nose and mouth. 
7. Repeat this exercise 15 times with a short rest after each group of 
five. 
8. Practice this twice a day preoperatively.

COUGHING
Lean forward slightly from a sitting position in bed, lacing your fingers 
together, and putting your hands across the incisional site to act as a 
splintlike support when coughing. 
1. Breathe with the diaphragm as 
described on the previous page. 
2. With your mouth slightly open, 
breathe in fully. 
3. “Hack” out sharply for three 
short breaths.

4. Then, keeping your mouth open, take in a quick deep breath and im-
mediately give a strong cough once or twice. This helps clear secretions 
from your chest. It may cause some discomfort but won’t harm your 
incision.

LEG EXERCISES
Lie in a semi-Fowler’s position and perform the following simple exer-
cises to improve circulation. 
1. Bend your knee and raise your 
foot—hold it a few seconds, then 
extend your leg and lower it to the 
bed. 
2. Do this five times with one 
leg, then repeat with the other leg. 
3. Then trace circles with your 
feet by bending them down, in-
toward each other, up, and then out. 
4. Repeat these movements five 
times.

TURNING TO THE SIDE
1. Turn on your side with your 
top leg flexed most and supported on a pillow. 
2. Grasp the side rail to help you move to your side. 
3. Practice diaphragmatic breathing and coughing while on your 
side.

GETTING OUT OF BED
1. Turn on your side. 
2. Push yourself up with one hand as you swing your legs out of bed.