



## Nursing instructions for deep breathing and coughing exercises

Created in 2004.03  
Revised in 2023.10  
English version in 2023.10

### I. Deep breathing exercises

#### i. Why do we need to do deep breathing exercises?

Pulmonary atelectasis may occur in over 95% of patients that undergo general anesthesia. Deep breathing exercise is important in aiding lung dilatation, increasing the lungs' vital capacity, lung ventilation, improving sputum elimination, and preventing comorbidities such as: pulmonary atelectasis, pneumonia, bronchitis, pleuritis, pulmonary embolism, etc.

#### ii. When to start deep breathing exercises?

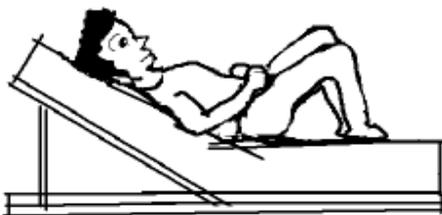
You can start exercises right after waking up from general anesthesia, 5-10 deep breaths each time, 5 times a day (25-50 deep breaths a day).

#### iii. How long do I need to do deep breathing exercises?

Starting from operation day, until 5 days post-op.

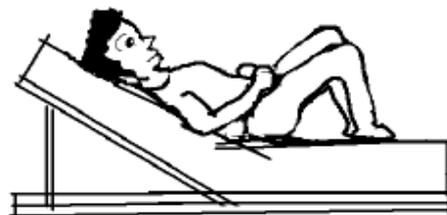
Abdominal Breathing:  
(non-abdominal surgery)

1. Use a pillow to raise the upper body to 45-60degrees, or sit on the edge of the bed.
2. Bend the knee slightly and relax the abdomen.

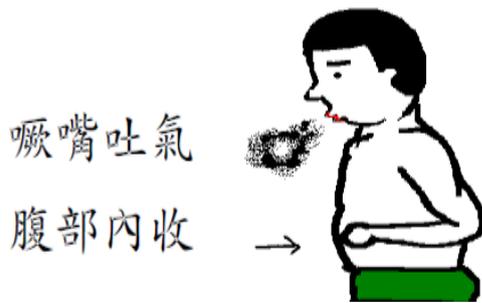


Chest Breathing:  
(abdominal surgery)

1. Use a pillow to raise the upper body to 45-60degrees, or sit on the edge of the bed.
2. Bend the knee slightly and relax the abdomen.



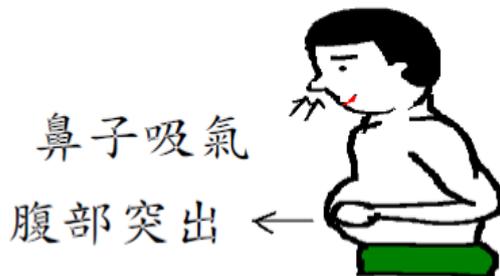
3. Place your hand above your navel, pucker your lips, exhale until your stomach is flat.



3. Place your hand on the sides of your chest, inhale slowly through your nose until you feel your ribs expanding, then hold your breath for 3 seconds.



4. Inhale deeply through your nose until your upper abdomen expands, hold your breath for 3 seconds, then exhale.



4. Pucker your lips, exhale slowly, you will feel your chest adduction.



## II. Coughing exercise

### i. Why do we need to do coughing exercises?

Coughing exercises are important to reduce breathing obstruction and breathing difficulties. It also aids in removing sputum and maintaining optimal breathing.

### ii. When to start coughing exercises?

After waking up from general anesthesia, you can start coughing exercise in conjunction with a deep breathing exercise.

### iii. How to do coughing exercises?

1. Sit on the bed or the edge of the bed, lean your upper body forward slightly, hold your hands together with fingers intertwined, and place the palm of your hands or a pillow firmly on your chest or abdominal wound (as shown in the photos below), to reduce pain from coughing vibrations in the wound area.
2. Please take two deep breaths first.
3. During inhalation, after the third time deep breathing, on exhalation, open your mouth and use your abdominal muscle to cough two to three times consecutively, then return to normal position.
4. Before doing this exercise, painkillers may be given as appropriate to relieve wound pain.



If you have any question or suggestion, please contact with us. We are happy to provide you services to you. Contact telephone number: Taipei/Danshui MacKay Memorial Hospital/Children's Hospital: (02)25713760; Hsinchu MacKay Memorial Hospital/Children's Hospital: (03)5745098; Taitung MacKay Memorial Hospital: (089)310150 ext: 311. Time of consultant: 9:00 am~12:00 noon, 2:00 pm~5:00 pm Monday ~ Friday.

**May God bless you**