

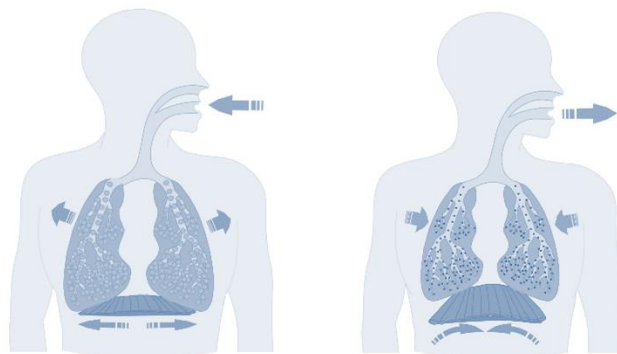
# Breathing Exercises

## Aims

Breathing is a vital component to preserve the regular operation of the human body. Apart from heart rate, blood pressure, body temperature, and blood oxygen saturation, our breathing pattern and frequency can also provide information about our health. For instance, a humped back or bad posture when sitting or standing can lead to dyspnea, which can affect the body's ability to exchange carbon dioxide and oxygen. Over time, the body's health and function may be impacted by an accumulation of waste gases and inadequate energy intake.

Lung is an essential organ for gas exchange between the body and the environment.

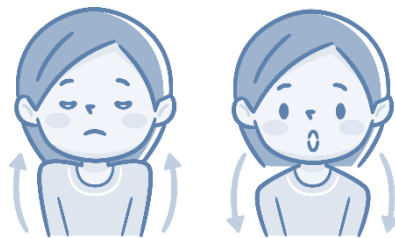
Effective expansion can be achieved by progressively increasing the force of muscle contraction through breathing exercises, which enhances the strength of the intercostal muscles, and further increases lung capacity.



## Breathing Pattern

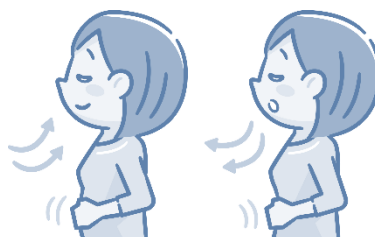
The three most popular breathing pattern are clavicular breathing, thoracic breathing and abdominal breathing.

**Clavicular breathing:** The upper chest is used in clavicular breathing, which raises or lowers the collarbone, shoulders, and ribs as you breathe. The majority of asthmatics breathe quickly and shallowly. When you raise your shoulders and collarbone to breathe, the diaphragm will press on your abdomen. Because of the shallow breathing depth and the inability of the majority of fresh air to reach the alveoli, the ventilation volume is comparatively limited.



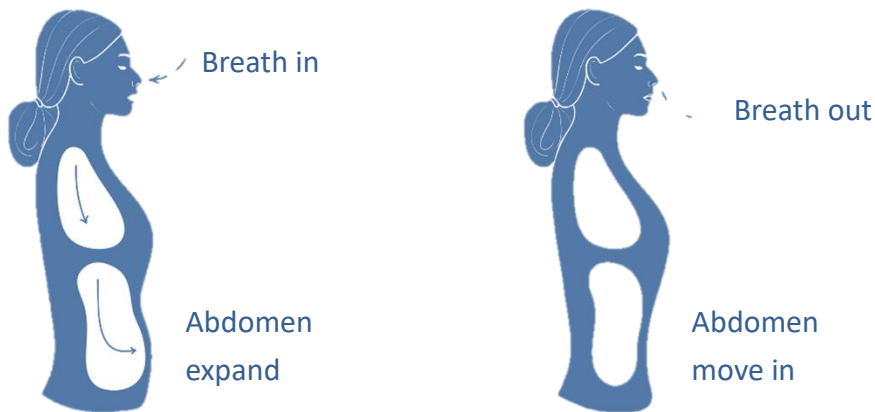
**Thoracic breathing:** It is the most commonly used breathing pattern, which is easy and effortless. The principle of thoracic breathing is mainly the contraction of the chest muscles. When a person inhales, air is sucked into the lungs and the chest expands upward and outward; when exhaling, the chest squeezes downward and inward to expel the air.

**Abdominal breathing:** It expands the diaphragm, allowing the lungs to take in more oxygen and increase ventilation. The rising and falling movements of the diaphragm will produce a piston effect, making the breathing deeper, which is more conducive to fresh air reaching the alveoli, and the ventilation volume will also be relatively increased. Abdominal breathing can help us to improve our cardiopulmonary function. It is the ideal breathing pattern and will be explained in detail below.



# Abdominal Breathing Technique

1. Slowly take a deep breath in through your nose, and your abdomen will expand naturally as you inhale.
2. Hold your breath for 3-5 seconds
3. Exhale very slowly through your mouth for 3-5 seconds
4. Repeat step 1 to 3



## Breathing Exercise

Firstly, make sure the child knows how to inhale and exhale. Before the game starts, you can hold the child's hand and blow into his palm so that the child understand what blowing is.

After that, ask the child to try it on himself.



Then, you ask the child to lie down on the floor mat/bed, with legs bent on the ground, and place the doll on the child's belly. Ask the child to take a big breath through the nose first. When inhaling, ask the child to expand his abdomen and lift the doll upward. When holding the breath, the adult will count "1, 2, 3, 4". Then ask the child to slowly exhale through the mouth.



When your child understands how to inhale and exhale, you can let your child try the following different games.

## Breathing Game 1: Blowing Bubbles

Ask the child to take a deep breath through his nose, then blows out slowly through his mouth, and tries to blow more bubbles.



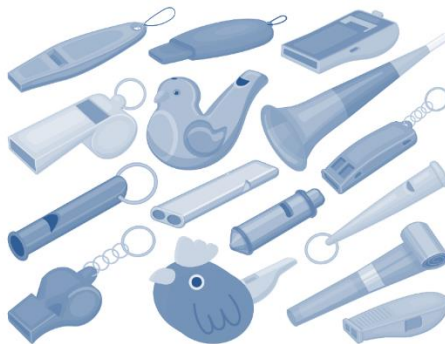
## Breathing Game 2: Blowing Windmill

Ask the child to take a deep breath through his nose, and then slowly blows it out through his mouth. See how many circles the child can move the windmill.

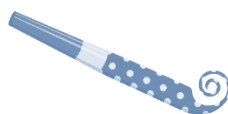


## Breathing Game 3: Blowing the Whistle

Prepare a whistle/flute that your child likes. Ask your child to take a breath through his nose, completely cover the mouthpiece with his mouth, and slowly exhale to play the instrument for about 2 seconds.



You can also prepare a retractable birthday whistle and ask your child to blow the rolled-up paper tube straight.



## Breathing Game 4: Drinking straw painting

Prepare the following:

- (1) A piece of white drawing paper
- (2) A drinking straw
- (3) Watercolor paint



Ask the child to dilute his favorite paint with water, then drops the diluted paint on the drawing paper, and then ask the child to blow air through the drinking tube to create a watercolor painting.



## Breathing Game 5: Paper towel blowing contest

Prepare the following:

- (1) One box of facial tissue
- (2) One table



Compete with your child. Place the tissue paper at one end of the table and blow the tissue paper to the opposite side. See who is faster to become the winner.



## Breathing Game 6: Hand Puppet game

Prepare the following:

- (1) One rubber glove
- (2) One paper cup
- (3) A drinking straw



The adult helps to poke a hole on the side of the paper cup that can accommodate a drinking tube, inserts the drinking tube, then puts a rubber glove on the opening of the paper cup.

Ask the child to take a breath through the nose, and then blow out the air through the drinking tube to inflate the rubber glove. You can also draw eyes, ears, mouth and nose on the rubber glove; then when the rubber glove is inflated, you will see interesting and funny figures.



If you have any enquires about the above information,  
please don't hesitate to consult your physiotherapist.



**Child Assessment Service, Department of Health  
Hong Kong Special Administrative Region**

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