

# Your COPD



## Table of Contents

Introduction .....	1
What is COPD? .....	2
Symptoms of COPD .....	4
What Causes COPD? .....	4
What Are Triggers? .....	5
Common Triggers in the Home .....	5
Triggers in the Outside Environment .....	5
Other Triggers .....	6
How to Control Triggers .....	6
Medication .....	8
Preventive Medications (inhaled anti-inflammatory medication) .....	8
Symptom Relieving Medications (bronchodilators) .....	9
Other Symptom Relieving Medication .....	11
Flare-up Reversing Medications (corticosteroids) .....	11
How to Take COPD Medicines .....	13
How to Use a Metered Dose Inhaler .....	14
Which Inhaler Should I Use First? .....	14
How Many Puffs Are Left? .....	15
Peak Flow Meter Use .....	16
When to Measure a Peak Flow .....	16
How to Use the Peak Flow Meter .....	16
How to Control Asthma .....	17
Other Treatments .....	17
Inspiratory Muscle Trainers .....	20
Ways to Assist Mucus Clearance .....	21

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## **Introduction**

The purpose of this booklet is to help you:

- Understand COPD
- Manage your COPD
- Recognize early warning signs of trouble
- Learn how to live a better, more active life

When you and your health care provider work together as a team, your COPD can be better managed.

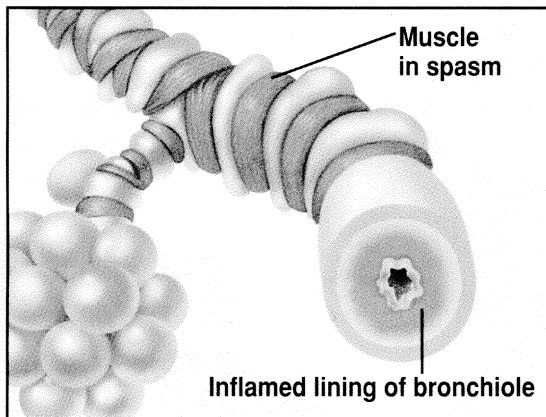
It is important for you to learn as much as you can about COPD.

With education we hope you will become more active, independent and self-reliant.

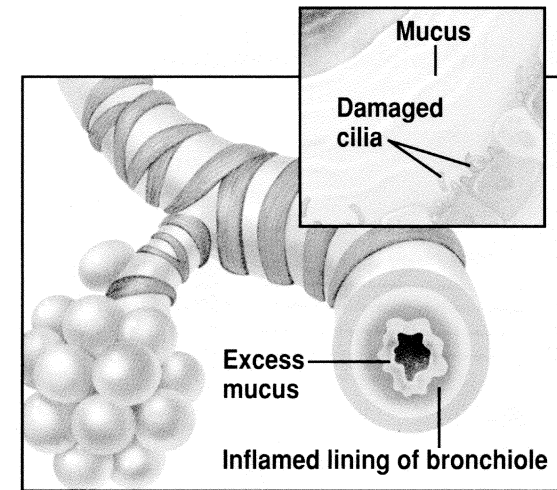
## What is COPD?

COPD stands for Chronic Obstructive Pulmonary Disease. This includes Chronic Bronchitis, Asthma, and Emphysema. You may have one, two or all three of these diseases. The main problem is getting the air out because of air trapping in the air sacs. Trapping of air affects the body's ability to expel the carbon dioxide (waste produced by body) and get oxygen (fuel that makes the body function) into the body.

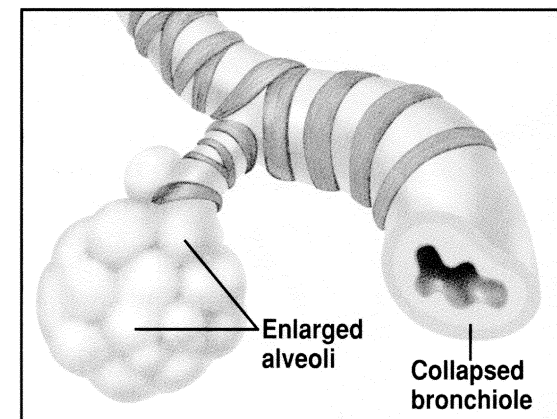
ASTHMA affects the small breathing tubes in the lungs called bronchioles. These small breathing tubes are very sensitive. Allergens and irritants in the environment can cause these tubes to become swollen and narrow. The muscles surrounding the breathing tubes can also tighten up causing the bronchioles to become even narrower.



CHRONIC BRONCHITIS affects the bronchi (larger breathing tubes) and bronchioles when the lining becomes inflamed and produces too much mucus. This swelling and excess mucus narrow the airway and makes it hard for air to flow into and out of your lungs.



EMPHYSEMA is the destruction of the air sacs (alveoli) and loss of elasticity of the bronchioles. This makes it more difficult for the lungs to absorb oxygen and expel carbon dioxide as well as causing the bronchioles to narrow or collapse when you exhale.



COPD is a condition which cannot be cured, but there are many steps that can be taken to improve your breathing, make you feel better, and improve your quality of life.

## **Symptoms of COPD**

COPD symptoms may include:

- coughing
- mucus production
- chest tightness
- wheezing (whistle type noise)
- shortness of breath
- difficulty breathing

The symptoms of COPD varies with each person. The symptoms may be all the time, occasionally, or only when you are having a flare-up or starting to get an infection. Nighttime may be worse for some people and may affect your sleep. Working with your health care team to develop an individual plan of treatment can assist in improving these symptoms.

## **What Causes COPD?**

Many things may cause COPD. The causes include: cigarette smoking, environmental factors at home or at work, multiple infections, and in a very small percentage it could be inherited (Alpha-1 Antitrypsin Deficiency).

## **What Are Triggers?**

Triggers are the infections, irritants, and allergens that make COPD worse. Many people with asthma are sensitive to allergens, such as pollen, animal dander, dust and mold. Everyone's breathing tubes can be affected by irritants such as smoke, pollution, and strong chemicals. You can control these triggers in your home. Infections, such as the common cold, are often the strongest triggers.

## **Common Triggers in the Home**

- smoke (from cigarettes, fireplace, or incense)
- animal dander (the shedding skin of your pets)
- dust
- dust mites (microscopic insects that live in the house, especially the bed)
- molds (mold grows in damp areas, such as the kitchen, bathroom, and soil of house plants)
- perfumes or aftershaves
- aerosol sprays (including hair spray)
- strong chemical fumes
- live Christmas trees
- aspirin
- sulfites (found in beer and wine)

## **Triggers in the Outside Environment**

- change of weather
- pollen
- grasses and trees
- cold air
- smog

## Other Triggers

- infections (ear, sinus, common cold)
- foods or food additives occasionally may be a trigger
- exercise can be a trigger for those with exercise-induced asthma

If you snore every night and seem to fall asleep easily during the day, you may want to check with your doctor about a sleep disorder.

## How to Control Triggers

### **DO NOT smoke or let yourself breathe smoke.**

- If you or a guest must smoke, go outside.
- Do not allow smoke in your bedroom, bathroom, garage, or car.
- Avoid areas where people are smoking, such as malls, sporting events, or restaurants.
- Do not use fireplaces, wood burning stoves or incense.

### **DO NOT have pets.**

- If you must have a pet, keep the pet outdoors.
- At least keep the pet out of your bedroom and bathe the pet weekly. A weekly bath will keep down the amount of dander (shed skin) that your pet spreads throughout the house.
- Any pet with fur or feathers can trigger asthma.

### **DO control dust and house dust mites.**

You spend at least 8 hours a day in your bedroom. This room deserves the most attention. Mattresses, box springs, blankets, stuffed animals, venetian blinds, and books are dust collectors.

- Enclose mattresses, box springs, and pillows in zippered plastic covers. You can get these from many department stores or from allergy supply houses such as National Allergy Supply (1-800-522-1448), or Allergy Control Products (1-800-422-3878).
- Wash bedding at least every 1 to 2 weeks (including the blankets). Use hot water.
- Avoid stuffed animals and other dust collectors in the bedroom.
- Wet dust venetian blinds, books, and furniture regularly.
- Change heating and air conditioning filters monthly. If you wish to invest in an air cleaner, the High Efficiency Particulate Air (**HEPA**) filters are the most effective.
- Carpets are dust collectors. Avoid carpeting in your bedroom. Limit carpets elsewhere in the house. Linoleum or hardwood floors are best. If you cannot remove the carpet, vacuum the carpet weekly using special allergy bags. Steam cleaning is helpful (steam heat kills dust mites). You can spray a diluted tannic acid solution (available from most allergy supply firms) onto the carpet every 2 to 3 months to destroy dust mites.

### **DO control mold sources.**

- Do not use humidifiers or vaporizers. In areas with high humidity, a dehumidifier may be useful.
- House plants are sources of dampness and mold. Keep plants out of your bedroom. Limit plants elsewhere in the house.
- Use bleach to kill mold.

### **DO control other triggers.**

- Avoid household chemicals with strong odors such as hair spray, perfumes, deodorizers, glues, paints, etc. Don't use household cleaning products with strong odors.
- If cold air triggers you, wear a scarf over your mouth and nose.
- Ask your doctor about the pneumonia shot.
- Ask your doctor about flu shots.

## **Medication**

There are three types of medicines:

- Preventive
- Symptom relieving
- Flare-up reversing

## **Preventive Medications (inhaled anti-inflammatory medication):**

### **How they work:**

They **decrease the sensitivity** of the breathing tubes. They prevent asthma from starting by blocking inflammation. If there is no inflammation, the muscle won't be irritated and won't tighten up. The breathing tubes stay normal. Daily use of preventive medication can make you feel like you don't have asthma!

**Examples:** inhaled corticosteroids (Beclivent<sup>®</sup>, Vanceril<sup>®</sup>, Flovent<sup>®</sup>, Azmacort<sup>®</sup>, and Aerobid<sup>®</sup>).

**Use:** Daily.

To be effective, preventive medicine must be used every day. These medicines take 1 to 2 weeks to start working, and up to 6 weeks to work best. Since they do not make you feel better immediately, you may be tempted to stop using them. **DON'T!**

**Caution:** Preventive medications do not provide rapid relief of symptoms.

### **Possible side effects:**

The inhaled corticosteroids (Beclivent<sup>®</sup>, Vanceril<sup>®</sup>, Flovent<sup>®</sup>, Azmacort<sup>®</sup>, and Aerobid<sup>®</sup>) are safe when used in recommended doses. Side effects are uncommon, but can include:

- cough
- a hoarse voice
- yeast infection of the mouth (with white spots on the cheeks)

You can decrease side effects by using a spacer device and rinsing your mouth after taking the medicine.

### **When to call your doctor:**

- If medication side effects bother you.

## **Symptom Relieving Medications (bronchodilators):**

### **How they work:**

Bronchodilator medications relax the muscle bands around the breathing tubes. The air passages open up and breathing becomes easier.

**Examples:** Albuterol (Ventolin<sup>®</sup>, Proventil<sup>®</sup>), metaproterenol (Alupent<sup>®</sup>, Metaprel<sup>®</sup>), and terbutaline (Brethaire<sup>®</sup>).

Oral bronchodilator: theophylline

Long acting bronchodilator: salmeterol (Serevent®). This is only used twice a day. It should only be used in certain cases; it is not for everyone.

**Use:** Relieves asthma symptoms rapidly. Prevents exercise from triggering asthma symptoms.

**Cautions:** Symptom-relieving (bronchodilator) medications do not reduce inflammation or swelling of the breathing tubes. If you need to use symptom-relieving medicines more often than prescribed, the underlying inflammation may not be controlled. Speak to your doctor about how to get the inflammation under control. In a moderate to severe asthma flare-up, it is important to treat the underlying inflammation in addition to relieving the symptoms. See section on “Flare-up Reversing Medications” on next page.

*Do not use inhaled epinephrine (Primatene Mist®).* It is less effective and has more side effects than other symptom relieving medicines.

**Possible side effects:**

- rapid heart rate
- tremors
- nervousness
- headache

These side effects decrease over time as your body gets used to the medication.

**When to call your doctor:**

- If you need to use symptom-relieving medicines more than prescribed by your doctor.
- If you are having a moderate to severe flare-up.
- If you have a very fast or irregular heart rate, severe headache, nausea, or vomiting.
- If you are still coughing, wheezing, or having difficulty breathing.

## Other Symptom-Relieving Medication

Ipratropium bromide (Atrovent®) is frequently used to treat COPD. It is a bronchodilator of the larger airways. It is indicated as a maintenance treatment of bronchospasm associated with COPD. It is not considered a fast acting drug, so it is not indicated for the acute episodes of bronchospasm.

A combination of Ipratropium bromide and Albuterol (Combivent®) is a drug used sometimes for COPD.

## Flare-up Reversing Medications (Oral Corticosteroids)

**How they work:**

These medications reverse the inflammation that causes a moderate to severe flare-up. The flare-up is reversed when the inflammation has stopped.

**Examples:** Prednisone and Methyl Prednisolone (Medrol®): These corticosteroids are not the same as the anabolic steroids misused by athletes.

**Use:** Oral corticosteroids are used for just 2 to 5 days to reverse a moderate to severe flare-up. These are referred to as “short bursts” of corticosteroids. COPD patients may need long-term corticosteroids for maintenance.

**Caution:** It can take several hours to several days for an oral corticosteroid to reverse a flare-up. Use symptom-relieving (bronchodilator) medication to help the acute symptoms until the underlying inflammation gets better.

**Possible side effects:**

- mood changes
- increased appetite
- weight gain

These side effects go away after the medicine is stopped.

Oral corticosteroids taken for more than 7 days can have more severe side effects. Do not take an oral corticosteroid for longer than 7 days unless directed by your doctor.

**When to call your doctor:**

- If you have a moderate to severe flare-up.
- If the flare-up gets worse despite treatment.
- If the flare-up has not cleared after 5 days of oral corticosteroid.

**Other medications:**

- Water – used to loosen phlegm (mucus).
- Oxygen – may be necessary for some. It is not needed by all patients.
- Antibiotics – to fight bacterial infections, when necessary.
- Expectorants – may assist in loosening phlegm.

- Diuretics – prescribed to eliminate excess fluids from the body.
- Potassium supplements – prescribed to reverse low potassium levels from taking diuretics.

## How to Take COPD Medicines

Inhaled medicines go directly into the lungs. They give you the most benefit with the least side effects. There are several ways to take inhaled medicines.

**Metered dose inhalers** (MDI) deliver the medicine as a spray. They work best when used with a spacer device. Metered dose inhalers are sometimes called “inhalers” or “puffers.”

**Spacer devices** are used with metered dose inhalers. With a spacer, more medicine goes directly into the lungs and less gets in the mouth and on the throat. The medicine does not taste as bad as when a spacer is used. Commonly used brands of spacers include Aerochamber® and InspirEase® and Optihaler®.

**Dry powder inhalers** allow you to inhale the medicine as a dry powder. Dry powder inhalers are convenient because they are small and do not require a spacer device. To use them you need to suck air in rapidly through the inhaler.

**Nebulizers** deliver the medicine as a fine mist. They are often used in the clinic or emergency room to give a “breathing treatment.” It takes about 15 minutes to give a “breathing treatment.”

## How to Use a Metered Dose Inhaler:

Inhalers need to be used correctly to work. Ask your doctor, nurse, respiratory therapist, or pharmacist to check the way you use inhalers. Follow these steps:

1. Shake the inhaler well and insert into the spacer device.
2. Breathe out as much as possible.
3. Place the mouthpiece of the spacer into your mouth.
4. Press down on the medication canister (releasing one puff of medicine).
5. Breathe in **slowly** and **deeply**. Fill your lungs with as much air as possible.
6. Hold your breath and count to 10.
7. Breathe out.
8. Then take another deep breath in from the spacer device. Hold it for 10 seconds. It takes 2 to 3 deep breaths to get all of the medication from a single puff into the lungs.
9. Wait 1 minute before taking the next puff.
10. When you are done, be sure to replace the protective cap on the mouthpiece of the inhaler.
11. Rinse your mouth after using an inhaled corticosteroid (Beclivent®, Vanceril®, Amzacort®, Flovent®, or Aerobid®).
12. Wash spacer and MDI boot (plastic holder) weekly with a mild soap and water (e.g., Joy).

## Which Inhaler Should I Use First?

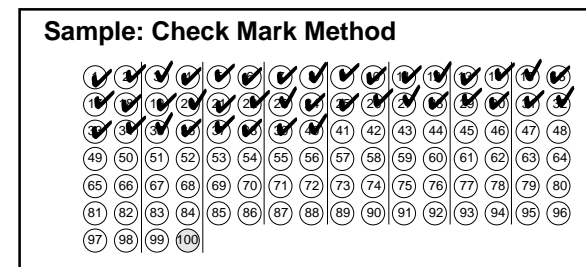
Use the inhaled symptom relieving (bronchodilator) medication first. It opens up the breathing tubes so the preventive (inhaled anti-inflammatory) medication can get into your lungs better.

## How Many Puffs Are Left?

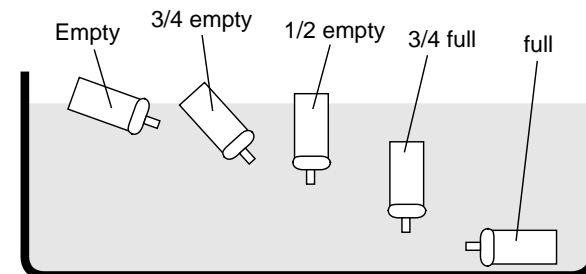
An inhaler may discharge even when there is no medicine left. To find out when your inhaler will be out of medicine, divide the number of puffs used each day by the number of puffs in the canister. This will give you the number of days the medication will last. Mark this day on your calendar. When this day comes, replace your inhaler.

<u>Inhaler</u>	<u># of puffs</u>	<u>Inhaler</u>	<u># of puffs</u>
albuterol	200	metaproterenol	200
beclomethasone	200	nedocromil	112
cromolyn	200	salmeterol	120
flunisolide	100	triamcinolone	240
ipratropium	200	fluticasone	120

Another method is to make a check mark each time you take a puff. When the number of check marks equals the number of puffs in your inhaler, your inhaler is empty.



Some inhalers float at the surface of a bowl of water when they are empty and sink to the bottom when they are full. The diagram below shows how you can tell how much medicine is left in an inhaler. This method is not very



accurate, especially if your canister is more than half empty. If you use this method and your symptoms get worse, you may need a new canister. This method **won't work** with cromolyn (Intal®), nedocromil (Tilade®), AeroBid® and Azmacort® inhalers.

## Peak Flow Meter Use

If your COPD is mostly asthma, then using a peak flow meter to track your lung function is a good idea. You will need to establish your personal best peak flow. This is done by doing a peak flow morning and night for two weeks while you are “well”. After your personal best is established, your health care provider can develop a treatment plan using the red, yellow, green zone management plan.

## When to Measure a Peak Flow:

- Ideally, the peak flow should be checked twice a day to get the earliest clue to an asthma flare-up.
- At a minimum, check the peak flow once a week when you are well. By checking the peak flow when you are well, you will be able to see how far the peak flow has dropped when you are sick.
- Be sure to check the peak flow twice daily if you get a cold or have a runny nose, coughing or wheezing.

**Check the peak flow BEFORE taking medications.**

## How to Use the Peak Flow Meter:

1. Stand up straight and place the mouthpiece of the flow meter in your mouth. Be sure that the indicator is at the bottom of the scale.
2. Breathe in as much air as your lungs will hold.

3. Then huff out (a quick forceful exhalation) as hard and fast as you can.
4. Repeat these steps 3 times, using the **highest** of the 3 readings as the peak flow rate.
5. Take peak flow readings twice a day for 2 weeks when you are well to find your *personal best* peak flow rate.

*My personal best peak flow rate is \_\_\_\_\_.*

The best peak flow usually occurs between 2 and 4 p.m.

## How to Control Asthma:

### Green, Yellow, and Red Zone Management Plans

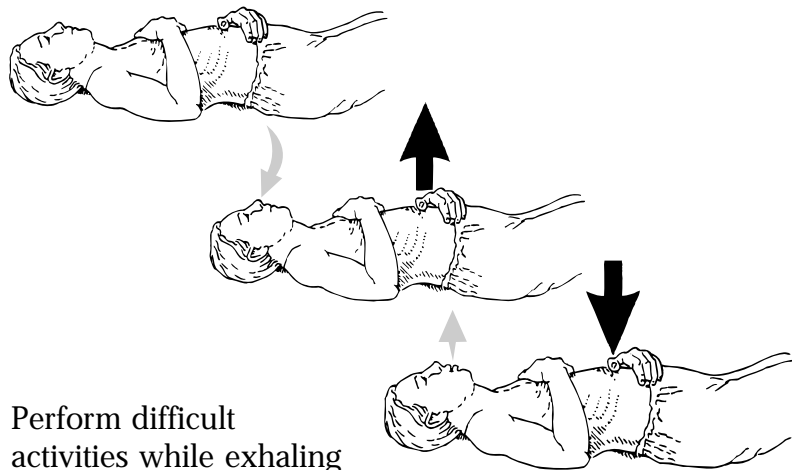
Your asthma does not stay the same all the time. Sometimes it will be better and sometimes it will be worse. Working with your doctor, you can have a plan for when you are well (green zone), and having a mild flare-up (yellow zone), or are starting to have a severe flare-up (red zone). By checking your peak flow daily, you can decide if you are in the green, yellow, or red zone.

**Ask your doctor for a written green, yellow, and red zone self-management plan.**

## Other Treatments:

**Breathing exercises:** To do pursed-lip breathing:

1. Inhale slowly through your nose.
2. Purse your lips by pretending that you have a drinking straw between your lips.
3. Breathe out slowly and evenly through pursed lips.
4. Try to take twice as long to breathe out as you did to breathe in.
5. Practice pursed-lip breathing several times a day.

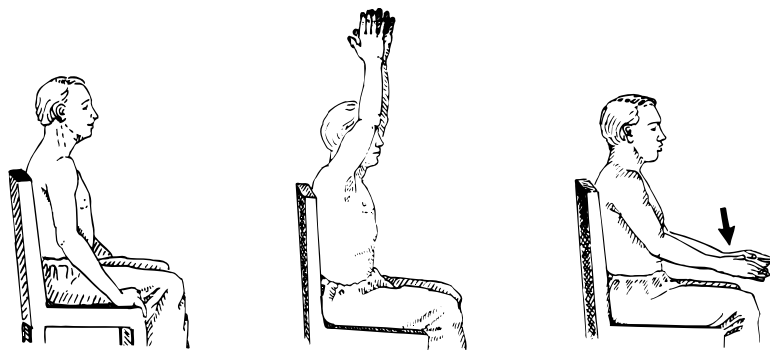


Perform difficult activities while exhaling through pursed lips. For example, take steps up stairs while exhaling through pursed lips and stop to inhale.

Use pursed-lip breathing whenever you do activities which make you breathless.

To do diaphragmatic breathing:

1. Sit in a straight back chair or, if your doctor agrees, lie on your back on a flat, firm surface and place a pillow under your knees.
2. Place one hand below your ribs and the other on your chest.
3. Inhale slowly through your nose for a count of 2. As you inhale, your hand below your ribs should



move out; the other hand on your chest should remain as still as possible.

4. Exhale slowly through pursed lips for a count of 4. Your hand below your ribs should move in.
5. During the exercise, keep your upper chest as quiet as possible and your neck muscles relaxed.
6. Do this exercise for 3 to 5 minutes at a time.

**Aerobic exercise:** It is important not to be a “couch potato.” There are many forms of exercise that are not strenuous, these include walking, chair aerobics, swimming, daily stretching and others. Doing exercise will make you less short of breath as your body becomes toned up. You may want to consult a physical therapist.

**Physical exercise:** Conditioning your body by doing arm, leg and walking exercises will increase the efficiency of your muscles. Your muscles then require less energy to perform activities. Thus, you have to breathe less to do the work.

To do arm exercises:

1. Stand or sit in a straight back chair.
2. Raise your arms over your head as you breathe in through your nose.
3. Lower them slowly as you breathe out using pursed-lip breathing.

As you get stronger, you may want to add a little weight (small weights or cans of vegetables).

**Relaxation techniques:** There are many ways to relax. It is important to find a way to relax and practice it when you are well so that when you feel short of breath or tense you can do your relaxation techniques without thinking about what to do. Some examples are yoga, biofeedback, relaxation tapes, relaxation exercise (example follows).

1. Lie on your back with head and knees supported with pillows. Rest your arms comfortably at your sides, OR sit up in a chair and let your hands hang loosely at your sides.
2. Clench your fists, tighten your arms and shrug your shoulders. Hold this for a count of 2.
3. Relax for a count of 4.
4. Tighten arms and legs together and hold for a count of 2.
5. Relax for a count of 4.
6. Repeat this exercise several times.

## Inspiratory Muscle Trainers

by Mardi Barcena, R.R.T., B.S., RCP

Inspiratory muscle trainers are devices used to increase respiratory muscle strength, endurance and enhance exercise tolerance. This is accomplished by exhaling through a device that provides a consistent resistance. Like any muscle conditioning it takes time and consistency. Results should be seen in 6 to 8 weeks if you practice regularly.

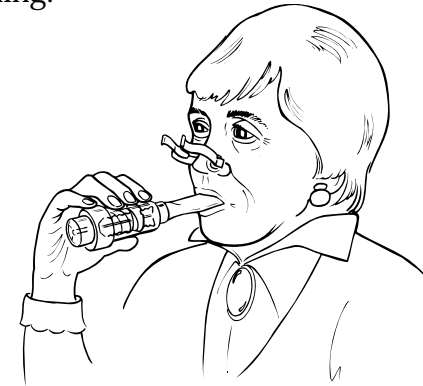
Several different devices are available on the market. The two most common are Threshold IMT<sup>®</sup> and Pflex<sup>®</sup>. The Threshold works by holding a constant inspiratory pressure as you take a breath in. This pressure is set by a respiratory clinician and will hold no matter how fast you breathe.

The Pflex has a series of openings in a circle. These openings act as a resistance when you inhale.

### How to use a Inspiratory Muscle Trainer

- Sit in a comfortable chair.
- Put a nose clip on your nose so that all of your breathing is done through your mouth.

- Place your lips around the mouthpiece. Inhale and exhale slowly.
- Do not remove your lips from the mouthpiece.
- Limit your first week 5 to 10 minutes 2 times a day.
- Write down when you do the exercise and how much you do.
- Increase as your respiratory clinician recommends.
- Try to do your training at the same time of day every day.
- Watching TV can help you relax while you do your training.



### Danger Signs

- If you get dizzy or light headed stop and notify your health care provider.
- If you experience chest pain stop and notify your health care provider.

**Be patient and consistent.**

## Ways to Assist Mucus Clearance:

### Pep Therapy

Pep Therapy can be used for airway clearance, bronchial hygiene or as an alternative to chest percussion. When you exhale you exhale through a resistance that has been set by a respiratory clinician. This causes a positive pressure that assists in keeping the airways open and

allows the mucus to drain. Huff coughing is then done for airway clearance.

There are several Pep devices on the market. Some of the most popular are the Threshold Pep<sup>®</sup>, Flutter Valve<sup>®</sup> and Thera-Pep<sup>®</sup>.

1. The Threshold<sup>®</sup> has a spring-loaded valve which provides a constant resistance when you exhale, set by your respiratory clinician.
2. The Flutter valve<sup>®</sup> contains a special design valve that you breathe against.
3. The Thera-Pep<sup>®</sup> has a fixed orifice you breathe against.

### **How to use a Pep device**

- Sit in a comfortable chair.
- Put a nose clip on your nose so that all of your breathing is done through your mouth.
- Place your lips around the mouthpiece.
- Take a full breath in and breathe out slowly (inhale count 1-2 – exhale, count 3-4-5-6).
- Continue this breathing pattern 10-15 breaths or until you feel the need to cough.
- Then “huff cough” (your respiratory clinician will instruct you).
- Keep a glass of water close by to drink as needed.
- Repeat this process for 10 to 20 minutes.
- Try to do it at the same time each day.
- Do it 3 to 4 times a day.

### **Danger Signs**

- If you become short of breath or have headaches, call your health care provider.
- If you see blood in your sputum, call your health care provider.
- If you have chest pain, call your health care provider.

The above equipment should only be used if prescribed by your health care provider. It is not intended for use by all patients.

Keep your lungs clear of excess mucus (phlegm) – techniques include: controlled coughing, postural drainage, chest percussion, and avoiding infections or common colds.

## **Nutrition:**

It is important to get a balanced diet and drink lots of fluid. Sometimes it helps to eat several small meals a day rather than 2 or 3 large meals. Sometimes drinking a meal is helpful (e.g., Pulmocare<sup>®</sup> or Ensure<sup>®</sup>). You may want to consult with a dietitian. Maintaining a healthy weight can make you feel better.

- **Bread, cereal, rice, and pasta** give long-lasting energy. Good choices include whole-wheat bread, bagels, pasta, pretzels, crackers, oatmeal and high-fiber cold cereals, brown or wild rice, and corn tortillas.
- **Fruits and vegetables** provide vitamins and minerals. Some, however, produce gas, which can cause your stomach to swell and press on your diaphragm. If you have shortness of breath, you may want to avoid gas-producing foods such as apples, broccoli, brussels sprouts, cabbage, corn, cucumbers, legumes, melons, onions, and peppers.
- **Meat and dairy products** are high in protein and help keep your muscles strong. Good sources include eggs, meat, fish, poultry, cheese, milk, and yogurt. Peanut butter, tofu, nuts, and seeds are also high in protein. Many of these foods are also higher in fat and can help you prevent weight loss.

- **Foods high in potassium** include orange juice, bananas, dried fruits, potatoes, salmon, and dairy products. You may be advised to eat more of these foods (or to take a daily potassium supplement) if you take certain diuretics. These foods replace the potassium your body loses as it gets rid of the excess fluid.

## Notes

## Notes

## Notes

The information presented here is not intended to diagnose health problems or to take the place of professional medical care. If you have persistent health problems or if you have further questions, please consult your health care provider.

If you have questions or need further information on your medication, please speak to your pharmacist.

Kaiser Permanente does not endorse any brand names; any similar products may be used.