How To Use Your Incentive Spirometer

This information will help you learn how to use your incentive spirometer (in-SEN-tiv spy-rah-MEE-ter). It also answers some common questions about it.

About Your Incentive Spirometer

An incentive spirometer is a device that will expand your lungs by helping you breathe more deeply and fully. It measures how much air you can breathe into your lungs.

Using an incentive spirometer:

- Helps you practice taking slow, deep breaths.
- Exercises your lungs and makes them stronger as you heal from surgery.
- Helps clear out mucus that builds up in your lungs.
- Lowers your risk of getting a lung infection as you heal from surgery.
The parts of your incentive spirometer are labeled in Figure 1.

![Incentive Spirometer Diagram](image)

Figure 1. Incentive Spirometer

It’s very important to use your incentive spirometer after your surgery. It’s also important to do your deep breathing and coughing exercises. This will help loosen and bring up any mucus in your lungs. Keeping your lungs active during your recovery will help prevent lung infections, such as pneumonia (nō-mōh-nyuh).

If you have an active respiratory infection, do not use your incentive spirometer around other people. A respiratory infection is an infection in your nose, throat, or lungs, such as pneumonia or COVID-19. This kind of infection can spread from person to person through the air. It can spread to someone near you when you’re using your spirometer to breathe in and out.
How To Use Your Incentive Spirometer

Here is a video that shows how to use your incentive spirometer:

Please visit www.mskcc.org/pe/incentive_spirometer_video to watch this video.

Setting up your incentive spirometer

Before you use your incentive spirometer for the first time, you will need to set it up. First, take the flexible (bendable) tubing out of the bag and stretch it out. Then, connect the tubing to the outlet on the right side of the base (see Figure 1). The mouthpiece is attached to the other end of the tubing.

Using your incentive spirometer

When using your incentive spirometer, make sure to breathe through your mouth. If you breathe through your nose, your spirometer will not work right. You can hold your nose if you have trouble.

If you feel dizzy or lightheaded (like you’re going to faint) at any time, stop and rest. Try again at a later time.

Follow these steps to use your incentive spirometer. Repeat these steps each hour you’re awake.

1. Sit upright on the edge of your bed or in a chair. Hold the incentive spirometer at eye level.
   - If you had surgery on your chest or abdomen (belly), it may help to splint your incision (surgical cut). To do this, hold a pillow against your incision. This will keep your muscles from moving as much while you’re using the spirometer. It will also help ease pain at your incision.

2. Before you use the spirometer, breathe out (exhale) slowly and fully through your mouth.

3. Put the mouthpiece in your mouth and close your lips tightly around it.
Make sure you do not block the mouthpiece with your tongue.

4. Breathe in (inhale) slowly through your mouth as deeply as you can. You will see the piston slowly rise inside the spirometer. The deeper you breathe in, the higher the piston will rise.

5. Try to get the piston to rise as high as you can. As the piston rises, the coaching indicator on the right side of the spirometer should also rise. It should stay between the 2 arrows (see Figure 1).

   - The coaching indicator measures the speed of your breath. If it does not stay between the arrows, you’re breathing in either too fast or too slow.
     - If the indicator rises above the higher arrow, you’re breathing in too fast. Try to breathe in slower.
     - If the indicator stays below the lower arrow, you’re breathing in too slow. Try to breathe in faster.

6. When you get the piston to rise as high as you can, hold your breath for at least 5 seconds. You will see the piston slowly fall to the bottom of the spirometer.

7. Once the piston reaches the bottom of the spirometer, breathe out slowly and fully through your mouth. If you want, you can take the mouthpiece out of your mouth first and then breathe out.

8. Rest for a few seconds. If you took the mouthpiece out of your mouth, put it back in when you’re ready to start again.

9. Repeat steps 1 to 8 at least 10 times. Try to get the piston to the same level with each breath. After you have done the exercise 10 times, go on to step 10.

10. Try to cough a few times. As you’re coughing, hold a pillow against your incision, as needed. Coughing will help loosen and bring up any mucus in your lungs.

11. Use the marker on the left side of the spirometer to mark how high the piston rises (see Figure 1). Look at the very top of the piston, not the bottom. The number you see at the top is the highest number the piston
reached. Put the marker there. This is how high you should try to get the piston the next time you use your spirometer.

- Write down the highest number the piston reached. This can help you change your goals and track your progress over time.

**Use your incentive spirometer 10 times each hour you’re awake.**

Cover the mouthpiece of your incentive spirometer when you’re not using it.

**Commonly Asked Questions**

**How often should I use my incentive spirometer?**

How often you will need to use your incentive spirometer is different for everyone. It depends on the type of surgery you had and your recovery process.

Most people are able to use their incentive spirometer at least 10 times each hour they’re awake. Your healthcare provider will tell you how often to use your spirometer. Follow their instructions.

**How long after my surgery will I need to use my incentive spirometer?**

The length of time you will need to use your incentive spirometer is different for everyone. It depends on the type of surgery you had and your recovery process.

Your healthcare provider will tell you how long you need to use your spirometer for. Follow their instructions.

**What do the numbers on my incentive spirometer measure?**

The large column of your incentive spirometer has numbers on it (see Figure 1). These numbers measure the volume of your breath in milliliters (mL) or cubic centimeters (cc). The volume of your breath is how much air you can breathe into your lungs (inhale).
For example, if the piston rises to 1500, it means you can inhale 1500 mL or cc of air. The higher the number, the more air you’re able to inhale, and the better your lungs are working.

**What number I should aim for?**

The number you should aim for depends on your age, height, and sex. It also depends on the type of surgery you had and your recovery process. Your healthcare provider will look at these things when setting a goal for you. They will tell you what number to aim for.

Most people start with a goal of 500 mL or cc. Your healthcare provider may change your goal and have you aim for higher numbers as you heal from surgery.

The package your incentive spirometer came in should also have a chart. You can use the chart to set your goal based on your age, height, and sex.

**What does the coaching indicator on my incentive spirometer measure?**

The coaching indicator on your incentive spirometer measures the speed of your breath. As the speed of your breath changes, the indicator moves up and down.

Use the indicator to guide your breathing. If the indicator rises above the higher arrow, it means you’re breathing in too fast. If the indicator stays below the lower arrow, it means you’re breathing in too slow.

Aim to keep the indicator between the 2 arrows (see Figure 1). This means your breath is steady and controlled.

**When To Call Your Healthcare Provider**

Call your healthcare provider if you have any of these when using your incentive spirometer:

- Dizziness or feeling like you’re going to faint (pass out).

How To Use Your Incentive Spirometer
• Pain in your lungs or chest.
• Pain when you take deep breaths.
• Trouble breathing.
• Coughing up blood.
• Fluid or blood coming from your incision site (surgical cut) when you cough.
• Trouble using your spirometer for any reason.

If you have any questions, contact a member of your care team directly. If you're a patient at MSK and you need to reach a provider after 5 p.m., during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.