

Let's Talk About...

Chest physical therapy for children

Your child can benefit from chest physical therapy (CPT) if they have cystic fibrosis or another lung condition. CPT will help them clear mucus from their lungs.

What is chest physical therapy?

Chest physical therapy is used to help move mucus out of the lungs. Keeping the lungs clear of mucus will help prevent lung infections. It can also make the infections less severe.

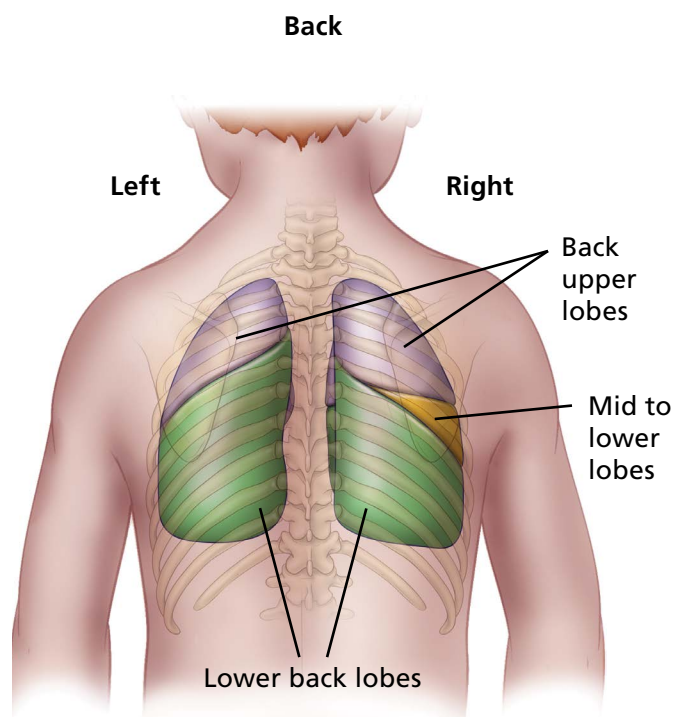
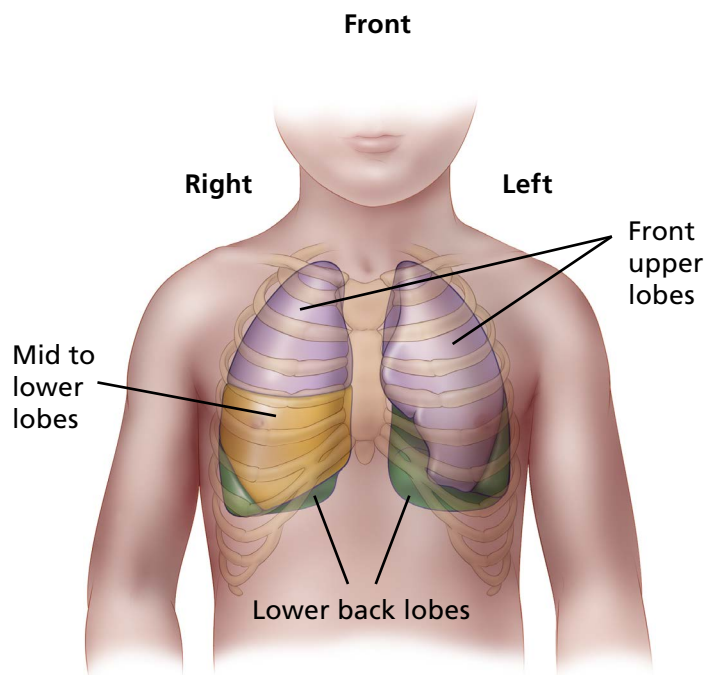
While caregivers or respiratory therapists perform CPT, it is important that your child is active during the treatment. CPT involves a combination of techniques, including:

- Putting your child in multiple positions to drain their lungs
- Using percussion (clapping on the chest wall with a cupped hand, palm facing down) to help move mucus into the larger airways
- Using vibration (placing a flattened hand on the chest wall to gently shake mucus into the larger airways)
- Deep breathing
- Coughing

What do I need to know about chest physical therapy?

Before starting CPT, make sure you understand the following:

- 1 Always percuss and vibrate over the ribs. Do NOT percuss over bony areas like the spine and breastbone, or the stomach, liver, kidneys, or spleen.
- 2 Do NOT percuss on bare skin. Have your child wear light, soft clothing, such as a T-shirt.
- 3 Do CPT before meals or 90 minutes to 2 hours after eating so your child is less likely to vomit.



How do I perform chest physical therapy?

You will perform chest physical therapies to four areas: Front upper lobes, upper back lobes, mid to lower lobes, and lower back lobes. When performing these therapies, your child should be performing huff coughs.

Front upper lobes

- Place your child on their back with their arms at their sides and their head slightly raised on a pillow.
- Percuss just below the collarbone and above the nipple on both the left and right sides of chest.
- When percussing the chest wall, cup your hand as if to hold water, with the palm facing down. Curve your cupped hand to the chest wall and trap a cushion of air to soften the clapping.
- Percuss both the left and right sides for 3 minutes each.



- While you percuss, have your child perform deep breathing and relaxed breathing. Following percussion, you will perform 3 vibrations.
 - To use vibration during CPT, place your hand firmly on your child's chest over the part of the lung you are percussing. Tense the arm and shoulder muscles to create a fine shaking motion.
 - Use a flattened hand, not a cupped hand, for vibration. Have your child exhale as slowly and completely as possible.

Once you have finished percussing and vibrating the upper lobes, have your child sit up and perform low-level and high-level huff coughs.

Back upper lobes

- Have your child sit up and lean forward on a pillow. This helps their shoulder blades move apart, making it easier to percuss.
- Percuss in the area between the spine and shoulder blade on both sides of the upper back.
- Percuss both the left and right sides for 3 minutes each. Make sure your child incorporates deep breathing and that you do vibrations. Your child should then do huff coughs.

Mid to lower lobes

You will percuss four total areas in the mid to lower lobes, taking 3 minutes to complete each area.

- Have your child lie on their left side. Raise their right arm up and over their head.
- Percuss over the front, lower-right chest area, just below the nipple.
- Percuss the right back side by having your child take a quarter turn to the left so you can reach the back. Then percuss the lower-right side of their chest just above the bottom edge of the ribcage.
- Place your other hand at the bottom of your child's ribs to remember not to percuss below that point. Again, include deep breathing and vibrations, followed by huff coughs.
- Have your child lie on their right side with their left arm raised over their head.

- Percuss over the front lower-left chest area, just below the nipple area.
- Percuss the left back side. Have the patient take a quarter turn to the right so you can reach the back. Then percuss the lower-left side of the chest just above the bottom edge of the ribcage.
- Again, place your other hand at the bottom of the ribs so you don't percuss below that point. Once again, include deep breathing and vibrations, followed by huff coughs.

Lower back lobes

- Have your child lie flat on their stomach with their head to the side.
- Percuss the areas below the shoulder blades and just above the lower ribs on both the left and right sides of spine.
- Place your other hand at the bottom of the ribs so you don't percuss below that point.
- Percuss both the left and right sides for 3 minutes each. Remember to include deep breathing and vibrations, followed by huff coughs.

The entire treatment should take about 35–40 minutes to complete.

How does my child perform huff coughing?

Have your child follow these instructions to perform huff coughing:

Low-level huffs

- 1 Take a normal-sized breath through your nose using your diaphragm.
- 2 Hold your breath for 3 seconds.
- 3 Fully exhale with an open glottis. It may help to whisper the word “huff” while breathing out.

Perform 3 low-level huffs.

High-level huffs

- 1 Take a deep breath in through your nose until you can't take in any more air. Then sniff to take in even more air.
- 2 Hold your breath for 3 seconds.
- 3 Perform short, quick, forced exhalation with an open glottis.

Perform 3 high-level huffs.

Attempt to move mucus by coughing to clear the secretions.

How do I make chest physical therapy more enjoyable for my child?

Since you'll be performing CPT often with your child, there are several ways you can make the time better for you both:

- Play your child's favorite music or stories during CPT
- Schedule CPT around a favorite TV show
- Ask family members and friends to perform CPT at times to break up the routine
- Create coughing or blowing games (blowing pinwheels, party blowers, or bubbles) to do during CPT
- Plan CPT at a time when there will be few interruptions

What if I have questions about chest physical therapy?

If you have questions about CPT or want to make sure you are using the proper technique, ask your child's healthcare provider. For more information, refer to the Cystic Fibrosis Foundation's handout: *An Introduction to Postural Drainage and Percussion*.

