

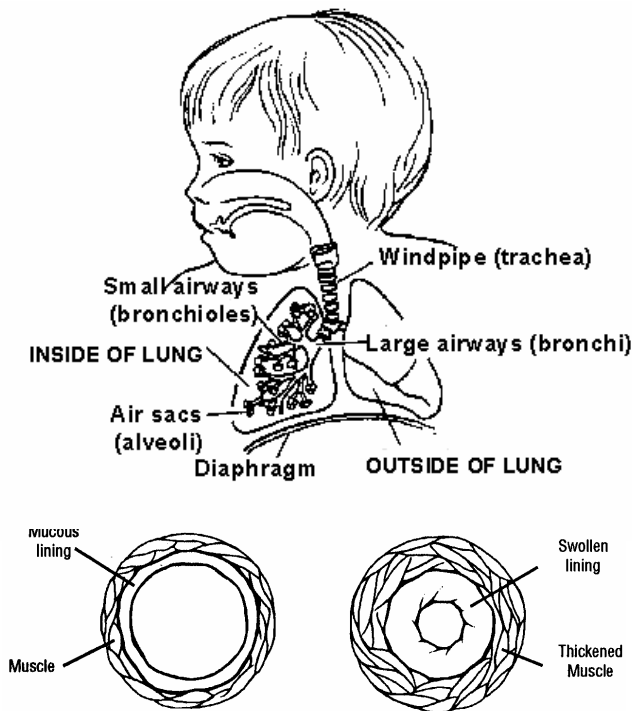
CHEST PHYSICAL THERAPY (CPT): INFANTS AND TODDLERS

Chest Physical Therapy (CPT), also called postural drainage, is a way for you to help your child get rid of extra mucus in his lungs. This is important because too much mucus can block the air passages in the lungs. Giving your child CPT treatments helps keep extra mucus from building up.

HOW THE LUNGS WORK

We breathe in air (inhale) through the nose and mouth. The air goes through the windpipe into the large airways in the lungs (Picture 1). Then the air goes into the small airways and into the tiny air sacs.

The air sacs in the lungs do important work. The oxygen from the air, which we need to live, goes into the blood through the air sacs. The used oxygen is changed into carbon dioxide in the blood. The carbon dioxide goes from the blood into the air sacs and into the air we breathe out (exhale).



Picture 1 The lungs inside the body.

MUCUS

All parts of the lungs have a protective mucous lining. The mucus that covers the lining catches tiny pieces of dirt, dust, and other particles in the air w

HOW MUCUS GETS OUT OF THE LUNGS

All parts of the air passages are lined with tiny hairs called cilia. The cilia act like an escalator that carries the mucus and particles up to the windpipe to be coughed out or swallowed.

WHAT HAPPENS IF THERE IS TOO MUCH MUCUS?

Normally, there is just the right amount of mucus in the lungs. But when the lungs become irritated or infected, a lot of thick mucus is produced. This happens because the lungs are working extra hard to get rid of the infection or irritation.

Extra mucus can slow down or stop the cilia from working. If the cilia don't work well, we have to help the lungs get the mucus out. This is why CPT is done.

This extra mucus can block the air passages. If air passages are blocked, the air can't move in and out of the air sacs. Then the child doesn't get enough oxygen into his blood and doesn't get enough carbon dioxide out of his blood.

DOCTOR'S ORDERS

- The CPT chart on pages 4 and 5 is marked for your child. This chart shows the positions you should use.
- The length of time spent giving CPT is different for each child. The doctor or nurse will tell you how long to spend on each area.
- Give your child CPT at these times: _____.
- Spend _____ minutes on each area.
- Give this treatment before the child eats. (The head-down positions may cause vomiting or stomach discomfort if there is food in the stomach.)

HOW IS CPT DONE?

CPT helps to move the extra mucus into the windpipe where it can be coughed up more easily. There are 4 steps in CPT: 1. Positioning, 2. Clapping, 3. Vibrating, and 4. Coughing.

1. Position

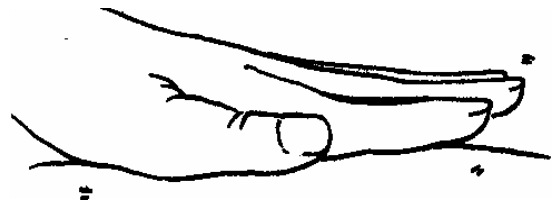
- Position your child so that the part of the lung to be drained is higher than any other part of the lung.
- It's important for you to be in a comfortable position because this makes the treatment more effective and easier for both you and your child. You may use a pillow to make your child more comfortable.
- Place your child on your lap for the head-down positions. (Or you can fold over a pillow or thick blanket and place your toddler in a head-down position in the crib or bed, so that the base of the lungs is higher than the head and upper body.)
- Always have your child's knees and hips bent to help him relax and to make coughing easier.

2. Clapping

If your child is old enough to understand, explain that the clapping will make a noise like a galloping horse, or like drums in a parade.

- Place a lightweight towel or blanket over the child's chest or back.
- Cup your hands by bending them at the knuckles. Hold your thumb against your index finger. Keep your fingers together to form a cup (Picture 2).
- Clap your hands, first one and then the other, on the area of the child's chest or back.
- The clapping should be done just firmly enough so that your child's head bobs.
- Do the clapping in a regular rhythm.
- The rate of clapping should be comfortable, and not so fast that you get too tired.
- Clapping, when done properly, doesn't hurt. If your child cries, it may be because he doesn't like being held in the position. **It is very important that your child doesn't think of it as a punishment.**

Picture 2 Hold your hand like this to form a cup for clapping.



Picture 3 Hold your hand like this to vibrate.



HOW IS CPT DONE? (Continued)

3. Vibrating

After the clapping, vibrating is done over the same area of the lung.

- To do the vibrating, hold your hand in the position shown in Picture 3 (page 2). Place your hand flat on the area to be vibrated. Stiffen your shoulder and arm so that your whole shoulder, arm, and hand vibrate (like shivering). Make sure not to use fingertips.
- The vibrating should be done with **gentle**, downward pressure on the area.
- Start each vibration at the outside edge of the chest or back and move slowly towards the center.
- Have your child take a regular breath and then vibrate as he exhales (breathes out).
- Repeat vibration for 5 breaths out.
- If the child can, have him say "SSS" when he breathes out.

4. Coughing

- After the mucus has been loosened by clapping and vibrating, encourage your child to cough and spit out as much mucus as possible.
- If you see any blood or blood streaks in your child's mucus, tell your physical therapist, doctor or nurse.

PUTTING IT ALL TOGETHER

1. Refer to the pictures on pages 4 and 5.
2. Place the child in the correct position.
3. Clap for 1 minute and vibrate for 5 breaths out
4. Then clap for another minute in this same position.
5. Vibrate 5 times again.
6. Encourage coughing.
7. Go on to the next position and do the same thing.

HELPFUL HINTS

- Try to make this as enjoyable as possible for you and your child. Many children like to watch a favorite TV show or movie, or listen to a favorite tape during chest therapy.
- Many times, with infants and younger children, chest therapy can be done just before naps and bedtime because it puts them to sleep.
- It's best to do chest therapy any time before your child eats, or at least 1 to 2 hours after a meal or snack.
- Remember: It's very important that your child does not think of chest therapy as punishment!

If you have any questions, please call _____.

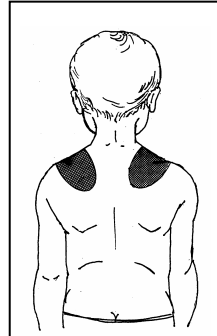
CHEST PHYSICAL THERAPY (CPT): INFANTS AND TODDLERS

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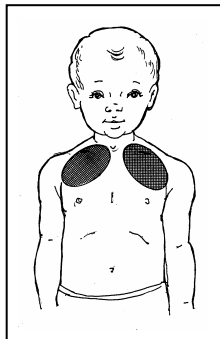
1. Upper lobes – apical and posterior segments

Lean your child forward over a pillow. Clap on the shoulders on both sides.



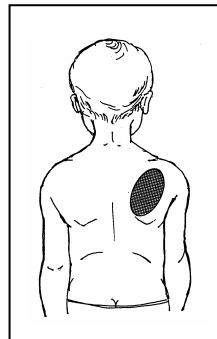
2. Upper lobes – apical and anterior segments

Lean your child back against a pillow. Clap over the collarbone.



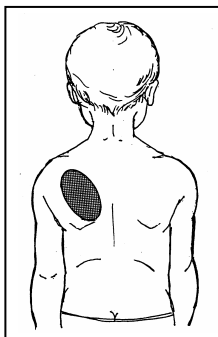
3. Right upper lobe – posterior segment

Cradle your child in your left arm, with his chest elevated 45°. Lean the child slightly forward. Clap over the right shoulder blade.



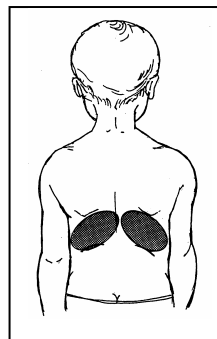
4. Left upper lobe – posterior segment

Cradle your child in your right arm, with chest raised 45°. Lean the child slightly forward. Clap over the left shoulder blade.

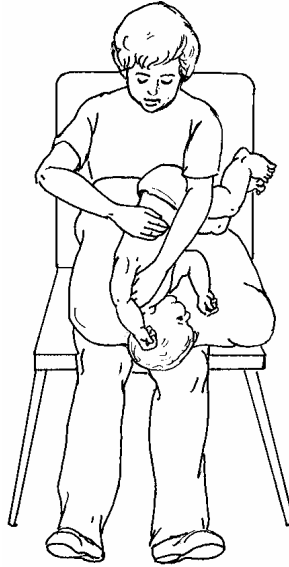
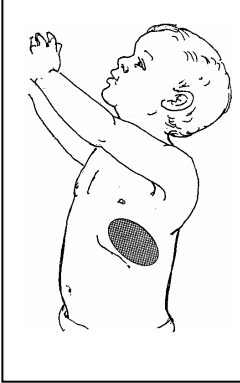


5. Lower lobes – apical segments

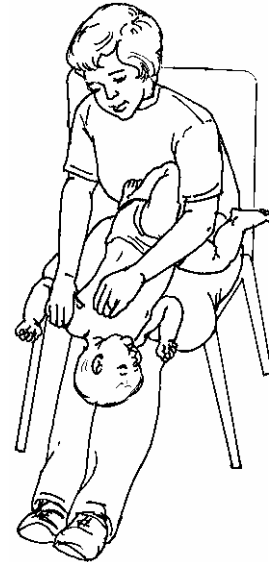
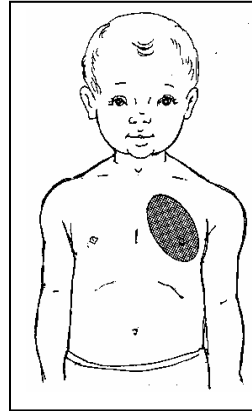
Lay your child flat on his stomach. Clap over the lower ribs.



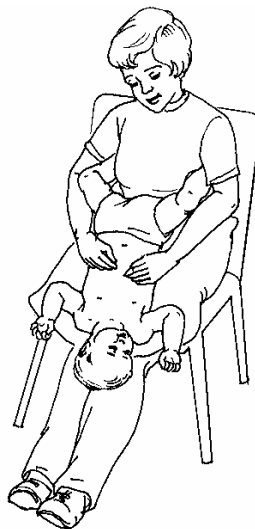
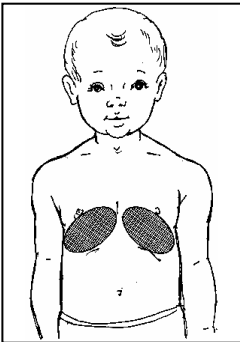
6. Left lower lobe – lateral basal segment
 Lay your child on his right side with head and chest down 45° and knees bent. Clap over the lower ribs.



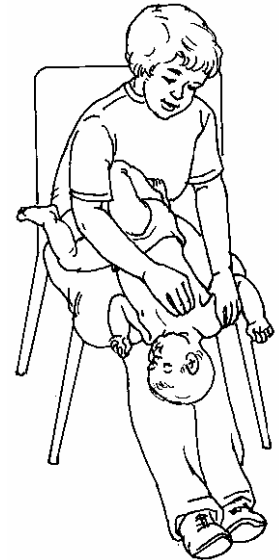
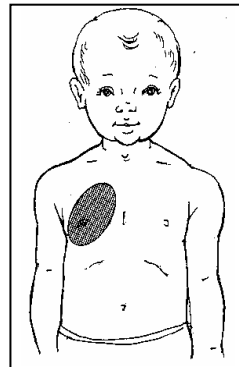
7. Left upper lobe – lingular segment
 Lay your child on his right side. Clap over the left nipple.



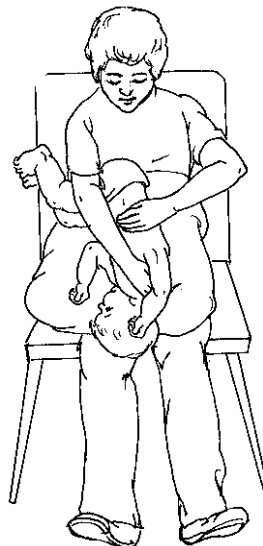
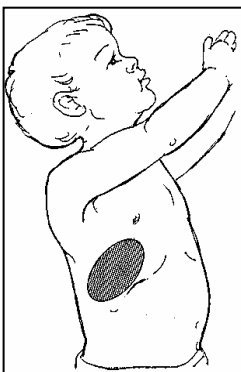
8. Lower lobes – anterior basal segments.
 Lay your child on his back with head and chest down 45°. Place pillow under the child's knees. Clap over the lower ribs.



9. Right middle lobe –
 Lay your child on his left side with head and chest down 45°. Clap over the right nipple.



10. Right lower lobe – lateral basal segments
 Lay your child on his left side with head and chest down 45° and knees bent. Clap over the lower ribs.



11. Lower lobes – posterior basal segments
 Lay your child on his stomach with head and chest down 45°. Place a pillow under the hips. Clap over the lower ribs..

