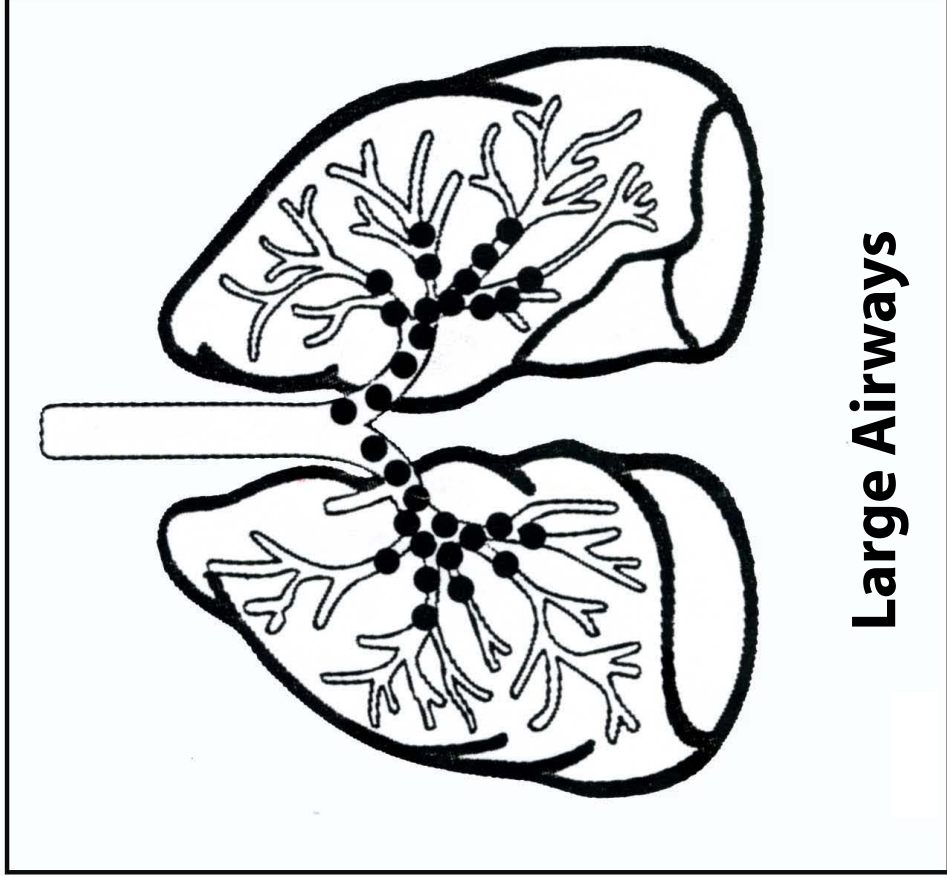
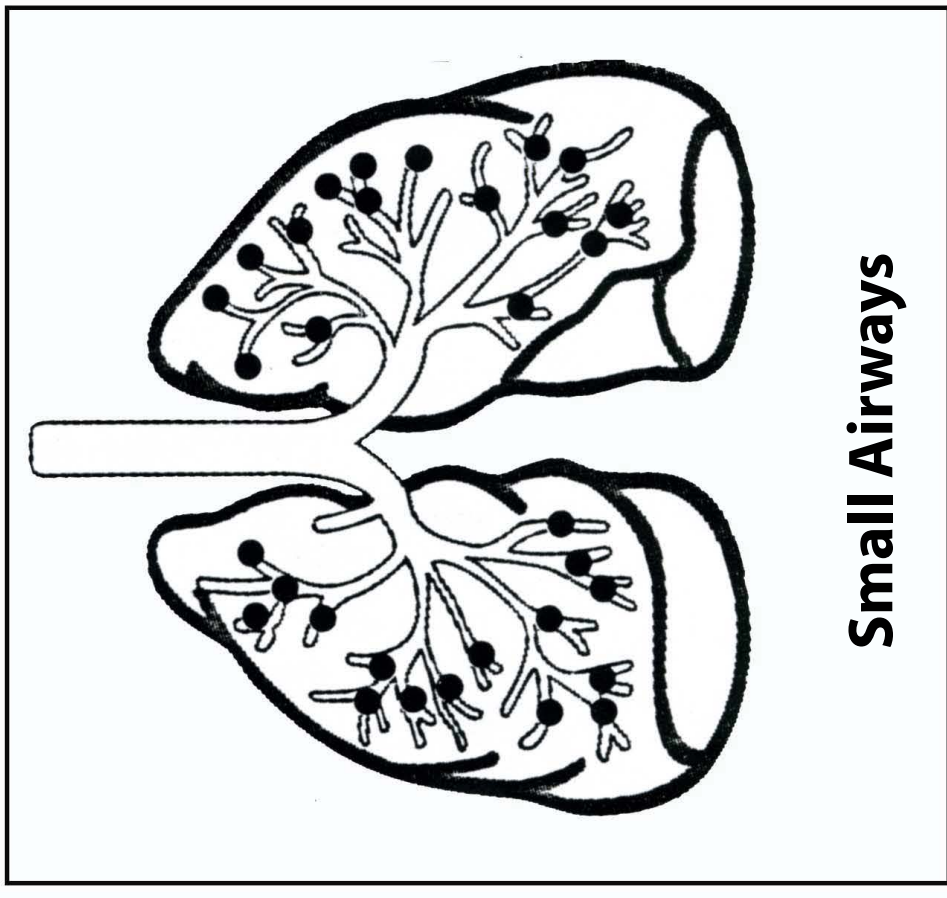


Delivery Sites of Bronchodilator Medications in the Lung



Large Airways

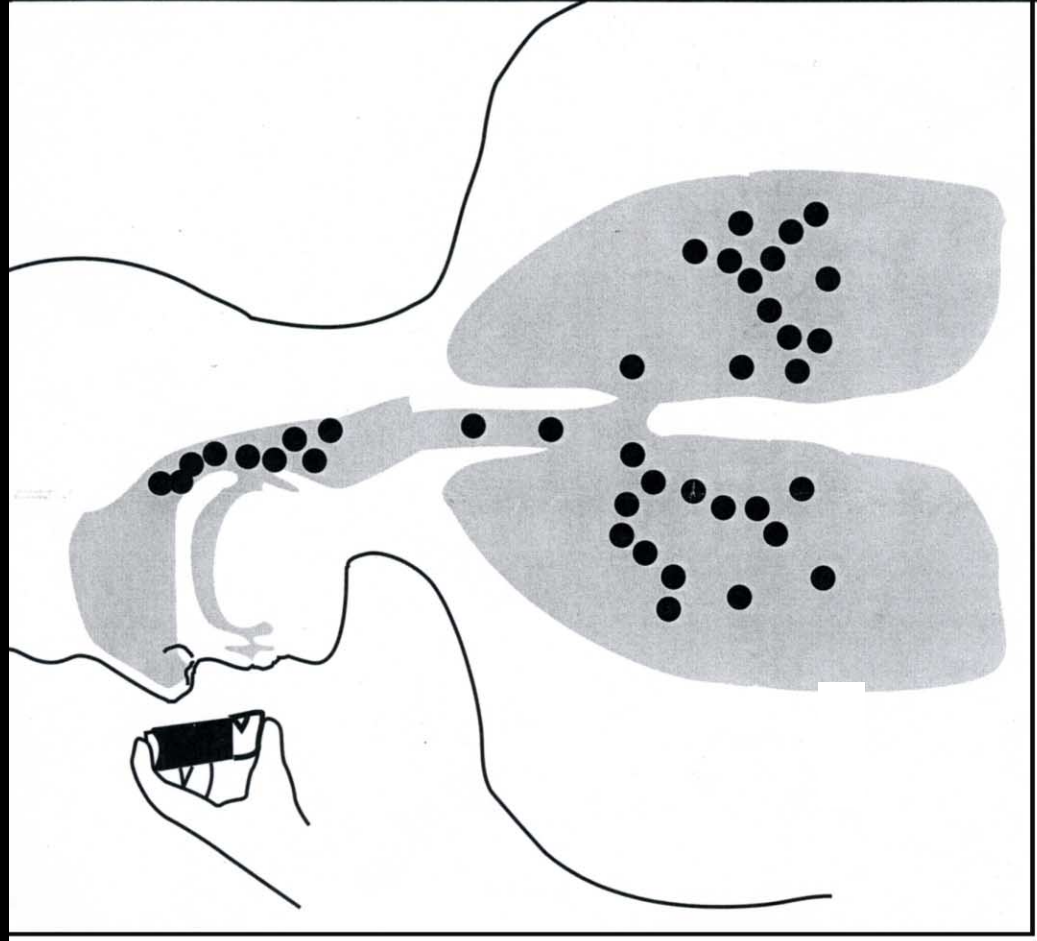
- Atrovent**
- Spiriva**
- Tudorza**
- Performist/Brovana (nebulizer)**



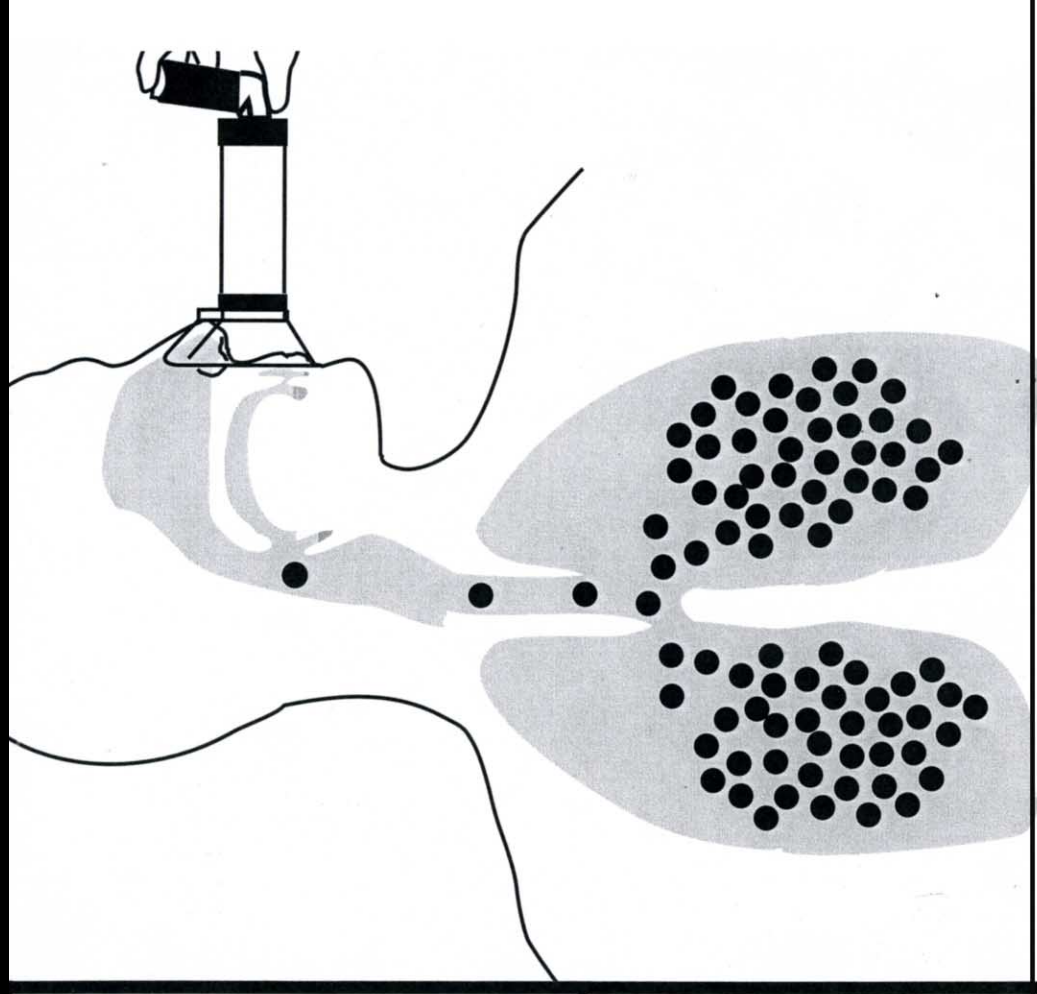
Small Airways

- Albuterol / Ventolin**
- ProAir/Proventil**
- Xopenex (nebulizer)**
- Foradil**
- Serevent**
- Arcapta**

Delivery without Spacer



Delivery with Spacer



COPD Medications

Types of Medications	How they work	Possible Side Effects & Special Precautions
Bronchodilators Fast-acting beta-2 agonists ProAir Albuterol Xopenex Proventil AccuNeb (<i>nebulizer</i>)	<ul style="list-style-type: none"> * Relax & open airways * Increase movement of cilia to help clear mucus * Help prevent exercise induced wheezing * Help stop attacks 	Trembling, Nervousness, insomnia, fast heartbeat, or increased blood pressure. Should be taken before other bronchodilators & inhaled corticosteroids.
Long-acting beta-2 agonists Serevent Formidil Arcapta Brovana (<i>nebulizer</i>)	<ul style="list-style-type: none"> * Relax & open airways * Take effect more slowly & work longer * Increase movement of cilia to help clear mucus * Help prevent exercise induced wheezing 	Fast heartbeat, headache, nervousness, or trembling. Do NOT use for quick relief. Do NOT take more often than prescribed.
Anticholinergics Atrovent Spiriva Tudorza	<ul style="list-style-type: none"> * Relax & open airways * Take effect more slowly than fast-acting beta-2 agonists 	Nervousness, dizziness, drowsiness, headache, upset stomach, constipation, or dry mouth.
Methylxanthines Theophylline	<ul style="list-style-type: none"> * Stimulate the diaphragm & breathing. * May be useful if symptoms occur during sleep. * Are long-acting 	Headache, nervousness, insomnia, irregular heartbeat, diarrhea, or nausea. Can interact with other medications. Blood levels must be monitored regularly. Limit caffeine intake.
Corticosteroids (these are not the same as the anabolic steroids used by some bodybuilders.) Flovent Qvar Pulmicort (<i>nebulizer</i>)	<p>inhaled:</p> <ul style="list-style-type: none"> * Reduce inflammation & swelling airways * Reduce mucus production * Decrease sensitivity of airways to irritants & allergens. 	<p>inhaled Very little enters bloodstream, so few side effects. Do not use for fast relief of shortness of breath. Must be used every day; rinse mouth & spit after use. Do not stop using without consulting your doctor. High doses must be tapered, not stopped abruptly.</p>
Asmanex Alvesco	<p>swallowed:</p> <ul style="list-style-type: none"> * Reduce inflammation & swelling airways * Reduce mucus production * Decrease sensitivity of airways to irritants & allergens. 	<p>swallowed: Enters bloodstream, so may cause insomnia, mood changes, skin bruising, weight gain, stomach problems, high blood pressure, glaucoma, cataracts, osteoporosis, or high blood sugar. Always take with food or milk. Do not stop using without consulting your doctor. High doses must be tapered, not stopped abruptly.</p>
Combination Medications Combivent Symbicort Advair Dulera DuoNeb (<i>nebulizer</i>)	<ul style="list-style-type: none"> * Combine effects of different types of medications 	Varies depending on the medication. Talk to your healthcare provider.

COPD Medications

Additional Medications Frequently used by Pulmonary patients.

Types of Medications	How they work	Possible Side Effects & Special Precautions
Antibiotics Levoquin Augmentin Bactrim Cipro Avelox Zithromax	Antibiotics are used to kill the bacteria that cause a number of different infections such as pneumonia & bronchitis.	Upset stomach, diarrhea, nausea. Stop the medication and call your doctor immediately if you experience rash, itching or hives.
Diuretics (water pills) Lasix Bumex Hydrochlorothiazide	Diuretics rid the body of excess fluid (water) by increasing the flow of urine. This prevents excess fluid from backing up into the lungs and making breathing difficult.	Frequent urination, excessive thirst, muscle weakness, leg cramps, (food high in potassium may help to prevent some side effects of diuretics. Consult your doctor first.)
Potassium supplements K-Dur Klor-con K-Lor	Potassium supplements replace the potassium lost with the use of diuretics & corticosteroids, keeping the lungs, heart and other muscles working properly.	Stomach pain, nausea, muscle weakness, leg cramps, fatigue (low levels), high levels: confusion, muscle tightness, cold, tingling (levels must be monitored).