Medication Types

I. **Bronchodilator** (relievers)
- Allow for better air exchange.
- Temporarily relax the muscles bands that surround the bronchial tubes.
- Three different types:
  1. Beta-2 agonists
  2. Anti-cholinergics
  3. Theophylline

II. **Anti-inflammatory medications** (swelling reducers)
- Causes inflammatory cells to less likely release chemicals that cause reactions in the lungs.
- Make lungs less sensitive to various factors that might trigger an attack.
- Two different types:
  1. Steroid type
  2. Non-steroid type

Bronchodilators

Beta-2 Agonists (Albuterol, Ventolin, Proventil, Alupent, Tornalate, Maxair, Xopenex, etc.)

- **Bronchodilators open the airways by relaxing the muscles in and around the airways that tighten during an acute attack.**
- Most commonly prescribed as an inhaler.
- Inhalers usually work within 5 minutes and have fewer side effects.
- The medicine goes right to the lungs by the inhaler.
- Liquid or tablets usually begin to work within 30 minutes and usually last as long as 4 to 6 hours.
- Remember: beta-2 agonists relieve symptoms, but do not reduce or prevent the swelling caused by the symptoms.
- Side effects include; rapid heart rate, tremors, feeling anxious, and nausea. These side effects tend to leave as your body adjusts to the medicine.

- Serious side effects which you should call your doctor immediately include: chest pain, fast or irregular heart beat, severe headache or feeling dizzy, very bad nausea, or vomiting.
- **Serevent** is a **long active beta-2 agonist,** which is to be used as a preventative medication to prevent bronchospasm and is **not to be used as a quick relief rescue mediation!**

Anti-cholinergic medications

Atrovent, Ipratropirum Bromide

- Relax the muscles that surround the bronchial tubes by using chemical messages that are different than beta-2 agonists.
- Usually, these medications are used with beta-2 agonists.
- Rarely cause side effects, except for dry mouth.
- If you are taking an anti-cholinergic along with a beta-2 agonist, take the beta-2 agonist first.

Theophylline

Theophylline, Theo-Dur, Theolair, Uniphyl, Slo-phyllin, Amminophylline and Constant-T, etc.

- Produce mild relaxation of the muscles around the bronchial tubes.
- You will have to have your blood level of theophylline monitored, which is why your doctor takes periodic blood tests.
- Take your Theophylline medication on a regular basis.
- Smoking affects Theophylline levels.
- Drug interactions with Theophylline include:
  - Cipro, Oflox, Tagamet, Erythromycin, Biaxin (all increase theophylline blood levels)
  - Rifampin, smoking, Ketoconazole (all decrease blood levels of Theophylline)
- Common side effects include: stomach aches and loss of appetite. This may go away by taking Theophylline with food.
- Extremely high blood levels can cause serious heart problems and convulsions.

Anti-inflammatory Medications (swelling reducers)

Steroids

Azmacort, Aerobid, Vanceril, Flovent, Pulmicort, prednisone, etc.

- **Act directly on inflammatory cells that cause reactions in the lungs.**
- Most consistent and effective in preventing acute attacks.
- During acute attacks, may be given by pull or liquid form to prevent worsening of attack.
- Long term prevention, use an inhaler form
- Inhaled steroids may take 1-6 weeks to start working.
- Fewer side effects when given by inhaler.
- Make sure you rinse your mouth after using an inhaled steroid.
- Side effects include: weight gain, mood changes, increased appetite.
- Long term oral steroid use, side effects include: thinning of bones, eye problems, high blood pressure, reduced ability to handle infections, and weight gain. Your doctor will monitor you closely.

Non-Steroid Anti-inflammatory

Cromolyn sodium (Intal)

- Interfere with a certain chemical that inflammatory cells release in the lung.
- This reduces lung inflammation and prevents acute attacks from occurring.
- Usually given long term and on regular basis.
- Make take up to 3 months to work.
- Very rare side effects.
- May cause dry throat and irritation.

Anti-leukotriene medications

Singulair, Accolate

- Leukotrienes are chemicals released by inflammatory cells in the lungs. They play a key role in inflammation.
- Block the action of these leukotrienes.
- Given on a long-term basis to prevent attacks and improve control.
- Given by pill.
- Usually takes about 1 week before seeing effect.
- Side effects include headache and stomach aches.
- Doctor will monitor you while on this medication.

Other things to remember:

- Never double doses. If you forget to take your medications, take it as soon as you remember. If it is time for your next dose, skip the missed dose and continue on your regular schedule.
- Always store medications away from children and pets.
- Always store medications in a dry, cool place.
- Never take another person's medication.
- Check with your doctor or pharmacist first before taking any other medications.
- Drink water, water helps with secretions.
- Avoid aspirin if you are an asthmatic. Use Tylenol instead.
- Take your antibiotics as prescribed.
- Take all your antibiotics until gone, even if you start feeling better.
- Remember, drugs are just one part of your therapy.

Metered Dose Inhaler (MDI, inhaler, puffer)

A metered dose inhaler (MDI) provides medication in the form of a "spray can". Due to the fact that there are many new drugs coming on the market and in slightly different forms, please check with your pharmacist or the product information insert for any special instructions on how to use it properly.

The advantages of MDIs are that they are easy to use, convenient to carry and provide rapid, easy doses of your prescribed medicine.

How to use your MDI

The Open-Mouth Technique

1. **Uncap the mouthpiece.**
   -Check the inside of the mouthpiece for any objects (dust, lint, coins, etc.). Firmly place the canister into the mouthpiece holder.

2. **Shake the inhaler vigorously.**
   -This mixes the medication and the propellant.

3. **Sit up straight or stand up.**
   -Allow your diaphragm room to move!

4. **Position the MDI** about **1 inch in front** of your mouth.
   -Use two fingers to measure this distance.

5. Breathe out **completely**

6. Press down on the MDI
   -to release the medication as you start to breathe air into your lungs.

7. **Hold your breath for 5-10 seconds**
   -This allows the medication to deposit into your airways before breathing the medication out of your lungs.

8. **Exhale slowly** through pursed lips.

9. **Wait** at least **1 minute between each puff** of the MDI.

10. **Repeat steps 1-8** when taking additional puffs of the same medication or before starting a new medication.
-This allows the medication to begin working and allow each additional puff to "go down" further into the airways. Waiting an entire minute between puffs allows the MDI time to "recharge".

Spacer Devices (AeroChamber®, Optichamber®, etc.)

Studies have shown that about 30% to 70% of people who use inhalers do not use them correctly.

Placing the inhaler into your mouth, closing your lips around it, and depressing the MDI, causes most of the medication to be deposited into the back of the throat and tongue and NOT into your airways.

The "open-mouth" method may be difficult for some patients to perform. Because of the challenges depressing the canister along with activating the inhalation, it may be difficult to "aim" the medication into an open mouth, depositing medication on the areas of the teeth, tongue, and sometimes into the eyes. It is for these reasons that a "spacer" was developed.

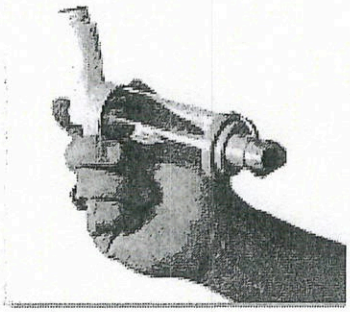
A spacer is a device that attaches to most all (MDIs) metered dose inhalers. It allows the medication to be carried directly into your airways on a smoother current (flow) of air, deeper into the airways where the receptor sites are located. The spacer also prevents the medication from depositing on the back of the tongue, inside the cheek or on the gums, or on the back of the throat. The more medication deposited in the mouth and throat areas create a potential for more side effects. Remember! The medication must travel completely through the airways to the receptor sites for the medication to work!

The spacer also holds the medicine in its chamber long enough for you to inhale it. The spacer makes it easy for you to use the medicine the right way (especially for children and those who have difficulty using the "opened mouth method"). Ask your, doctor or respiratory therapist about the many different spacers available.

How to use an MDI with a spacer device

1. **Uncap the mouthpiece (of the MDI)** –
   -look inside for any objects (duct, tint, coins, etc.), then
   -firmly place the canister back into the mouthpiece.

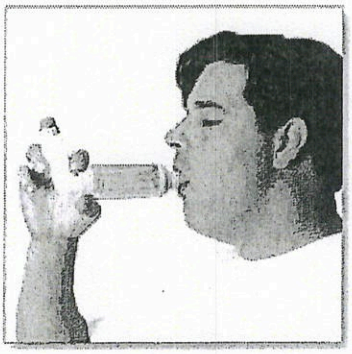
2. **Uncap the mouthpiece (of the spacer)**
   -and look inside for any objects (duct, tint, coins, etc.).



3. **Place the uncapped, MDI into** (the open end of) **the spacer device.**

4. **Shake the canister vigorously**
   -to mix the medication and the propellant

5. **Sit up straight** or stand!



6. **Breathe out** completely through pursed-lips

7. **Place the spacer in your mouth and close your lips around it.**
   -Make sure that your tongue is **under** the mouthpiece and that your teeth are out of the way.

8. **Press the MDI once**
   -releasing the medication into the spacer for inhalation

9. **Slowly, inhale** through the mouth until your lungs are full of air.

10. **Hold your breath** for 5-10 seconds.
    -This allows the medication to deposit into your airways before breathing the medication out of your lungs.

11. **Wait at least 1 minute**
    -between each puff of medication and between each different medication.

12. **Repeat steps 1-11** for each additional puff needed

Inhaler Maintenance

1. Keep the mouthpiece clean by keeping it capped when it's not in use.

2. Twice a week, wash the plastic mouthpiece with mild dishwashing soap and warm water. Rinse it VERY well and let it dry completely before putting the canister in the holder again.

When is your inhaler is empty?

There are approximately 200 puffs in the regular size inhalers, and approximately 80 puffs in the sample size. You need to keep track of how much you have used.

If you take an inhaler on a regular, daily basis:

-Count how many puffs you use each day and divide that number by the total number of puffs in the canister.

Example- You use 2 puffs of Albuterol, 4 times a day. That equals 8 puffs per day. 200 divided by 8 = 25. The inhaler will last for 25 days.

If you use an inhaler on an "as needed" basis:

-Place a "hash mark" on the inhaler box (or on the inhaler itself) to keep track of the number of puffs you have used.

Remember! Always know when your inhalers are going to run out! The propellant inside the canister can still make it "feel" full when you shake it! And, always remember to refill your prescriptions before they run out!

Dry Powdered Inhalers (DPI) (Advair®, Pulmicort®, etc.)

Dry powdered inhalers (DPIs) are another type of inhaler used to deliver medication particles into the airways. These medication particles are dry (unlike the MDIs which are pressurized medication canisters mixed with propellants). DPIs are breath activated, which means, you inhale the particles into your airways. There are different types of DPIs, a disk-type (Singulair, Advair) and a Turbuhaler (Pulmicort). Most DPIs have a counting system that allows you to monitor the amount of medication left in the device.

How to use a DPI Disc

1. **Hold the disc flat** (in one hand)

2. **Open the mouthpiece** by pushing the cover to the right with your thumb until you hear a "click"
   -Place your thumb in the "groove" on the side of the device and push away from you.

3. **Exhale** completely

4. **Place your mouth around the** (exposed) **mouthpiece**
   - make sure that your lips completely cover the mouthpiece

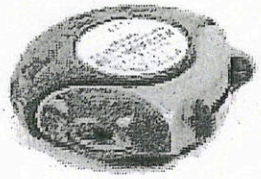
5. **Inhale the medication** through the mouth deeply and steadily into the airways

6. **Hold your breath** for 5-10 seconds

7. **Exhale** through pursed-lips

8. **Repeat steps 1-7** for additional puffs

9. **Close the inhaler** by pulling the mouthpiece cover back in place



Advair

How to use Foradil

1. Open packet carefully, remove capsule just before use.

2. Open handihaler and insert capsule into chamber. Do not swallow it!

3. Close chamber and press piercing tabs on either side together and release.

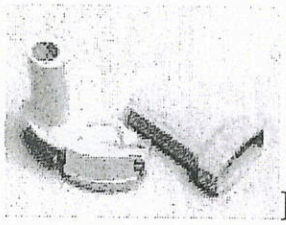
4. Keeping inhaler upright – completely exhale breath.

5. Inhale slowly and deeply so you can hear the capsule vibrate.

6. Hold your breath as long as possible (5 to 10 seconds) or count to ten, exhale. Then take another inhalation to make sure the whole dose is taken.

7. Open inhaler and dump out capsule in the garbage. Try not to touch it. If you do, wash your hands immediately.

8. Clean the inhaler weekly.



Foradil

How to use Spiriva

1. Open medication blister carefully and remove only 1 capsule immediately before use.

2. Open the Handihaler and insert the capsule into the chamber – do not swallow it!

3. Close mouthpiece until it clicks.

4. Press the piercing button completely once and release keeping the mouthpiece pointed upward.

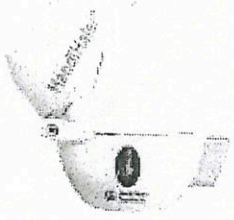
5. Breathe out completely.

6. Inhale slowly and deeply so you can hear the capsule vibrate.

7. Hold your breath as long as possible (count to ten) – exhale and then repeat to make sure the full dose is taken.

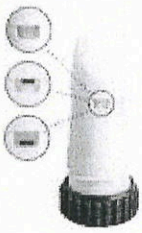
8. Open Handihaler and dump out the used capsule into the garbage. Try not to touch the capsule, if you do, wash your hands immediately.

9. Clean the inhaler weekly.



How to use a Turbuhaler

1. **Hold** the inhaler **upright**
2. **Twist the cover** and **lift** off
3. **Hold onto the brown grip and twist it to the right as far as it will go.**
4. Then, **twist the grip** back to the left until you **hear a "click".**
5. **Exhale completely** through pursed-lips
6. Keeping the Turbuhaler upright, **place it between your lips and inhale** deeply and forcefully.
7. **Repeat steps 1-6 for additional inhalations**



Pulmicort® Turbuhaler

- **Always rinse your mouth with water after using ANY steroid inhaler! Do not swallow the water.**

Medication Schedule for _____ MD _____

Medications	Type of medication	Dosage	How often?	Scheduled times

Medications						
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

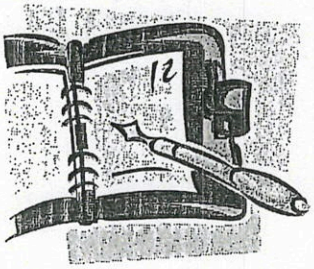
Energy Budgeting and Conservation

People with COPD (chronic obstructive pulmonary disease) know that any daily activity takes more effort and energy than it normally would. This doesn't necessarily mean you have to **completely** change your lifestyle, although you can benefit from learning simplified ways of doing household tasks, gardening, or even traveling.

Before you start your daily activities, here are some general tips:

Plan Ahead

1. Consider the best time and best way to accomplish tasks.
2. Try using the same methods each time you do a certain activity to improve your skill and conserve energy.
3. Avoid unnecessary steps by gathering everything you need before you start.
4. Use labor saving devices, (e.g., electric mixer and can opener, rechargeable electric hand-held vacuum, etc.)
5. Use wheels for transport. Use cart to distribute supplies or laundry.
6. Do not do two tasks back-to-back which require a lot of energy.



Set Priorities

1. Schedule your day so that the most important activities get done before you run low on energy.
2. Spread activities out during the day. Spread out light and heavy tasks.
3. It is wise to eliminate unnecessary tasks.

Purse Your Lips

1. Pursed-lip breathing is probably the best way you can minimize shortness of breath.
2. Pursed-lip breathing slows down your respiratory rate, allowing more air to move in and out of your lungs.
3. Use this breathing technique throughout an activity and also during rest periods.
4. Be sure to exhale for at least twice as long as you inhale.

5. Do the strenuous work itself in the phase of exhalation.
6. If you are on continuous oxygen or oxygen with activity, then use it with all forms of exertion (short or long duration). Your doctor will tell you "how much" to use during times of increased activity. Your body needs more oxygen with exertion.

Pace Yourself

1. Maintaining a steady pace rather than rushing around conserves energy.
2. Scheduling rest breaks throughout an activity and between tasks can help your day with less strain.
3. Take frequent rests – spend 10 minutes an hour just resting.

Positioning Counts

1. Choosing the most comfortable position for each activity can be a real energy saver.
2. Sit down whenever possible.
3. Avoid bending over as this interferes with breathing.
4. Try to push and slide equipment rather than carrying or lifting it.

Remember

-Organize your time
-Simplify your task
-Go slowly and pace yourself
-Fatigue is normal; over-fatigue is to be avoided
-Use your diaphragm and pursed-lip breathing.

Modified Borg Scale

0	Nothing at all
0.5	Very, very slight (just noticeable)
1	Very slight
2	Slight
3	Moderate
4	Somewhat severe
5	Severe
6	
7	Very severe
8	
9	Very, very severe (almost maximum)
10	Maximum

Personal Hygiene

1. Sit down whenever your can, i.e., shaving or putting on make-up, showering.
2. Use a washcloth instead of splashing water on your face.
3. Think about a new attractive haircut requiring less maintenance.
4. Hypoallergenic cosmetics
5. Use a pitcher or glass to pour water when shampooing
6. Use an electric toothbrush and rechargeable electric shaver – try shaving half of your face and rest; then shave the other half.
7. Do not use spray deodorants and hair spray.
8. Do as many of your personal hygiene tasks as you can while wearing your pajamas.
9. Set-up a personal hygiene "center" with chair, table with mirror, shaver, disposable cup, comb, make-up, etc.
10. Set all your personal hygiene articles out. Keep these in the same place.
11. Take care of your teeth. Infected broken teeth lead to poor nutrition – and germs in your mouth can infect your lungs.
12. Keep your clothing simple, e.g., top and pull-on pants made of a cotton or polyester blend. It's lightweight, not binding and you're dressed and ready to go.
13. Putting on shoes and socks – be sure to exhale through pursed-lips while bending. Wear slip-on shoes.

Bathing and Showering

1. Use a chair or stool in your shower or bathtub.
2. Grab bars and no-slip strips will help you keep your balance.
3. Exchange an old showerhead for a hand-held showerhead that can be switched to a variety of sprays. This helps in keeping water off your face. Also, this is helpful in rinsing of walls of the shower and bathtub.
4. To decrease the amount of steam, turn the cold water on first than slowly add the hot.
5. Use your oxygen in the shower or bath if you have been prescribed oxygen with activity.
6. Have a towel or terrycloth robe nearby.

7. Avoid scented soap.
8. In order to scrub your back, try a long-handled brush or folded towel and pull diagonally across back.
9. Keep windows and doors open in the bathroom as much as possible. Use a fan. The air needs to circulate.

Housecleaning

Equipment: Lightweight electric boom, rechargeable electric hand-held vacuum, lambs wool duster with an 18-24" handle, general, all-purpose liquid appliance and cabinet cleaner in a plastic spray bottle; mop, broom, brush, dust pan – all with long handles; cleaning cloths (2 dusting mitts – for both hands), basket or bucket to hold all your small equipment.

All equipment can be carried in a golf-type, wheeled buggy.

Bathroom

1. Keep paper towels and cleaner out in the open.
2. Cleaner too strong? Dilute it with water. Wear a mask.
3. If possible, clean immediately after use.

Dust This is a real enemy!

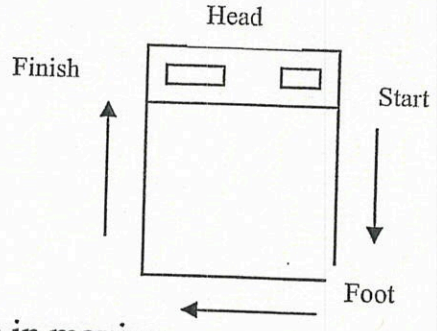
1. Try and keep it at a minimum.
2. While dusting – wear a mask – dust frequently to keep the dust out of the air.
3. While pushing a vacuum cleaner or broom:
   a. Push objects while breathing out with pursed-lips.
   b. Stop and rest while breathing in, using your diaphragm.
   c. Continue your pushing in the same manner.
   d. Wear a mask.

Making the Bed

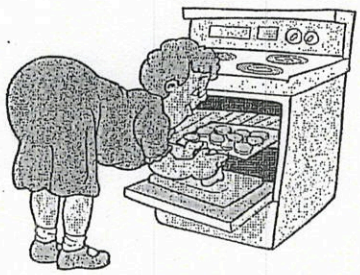
You want comfort in bed, but you don't want to spend a lot of energy fixing it up.

1. Comforter (no feathers) – act as both a bedspread and a blanket.
2. When arising in the morning, grasp the top sheet, blanket and comforter, which weight only a few ounces, and with one tug, pull them up over the pillow, pat, and your bed is made.
3. Total linen change:

a. Place a chair or bench near the foot of the bed.
b. Lay the comforter and blanket back to air over the bench.
c. Remove pillows and soiled sheets, have clean ones near.
d. Have clean sheet folded so it can be opened without waving it in the air.
e. Spread under sheet (fitted sheet). Place pillow.
f. Spread upper sheet (flat sheet), followed by covers, tuck at side.
g. Progress down towards the foot, smoothing and tucking.
h. Move up second side in the same manner, placing pillow and pulling up coverlet.
i. Work relaxed, rhythmically and smoothly – no jerking.
j. Practice good posture while working. Do your pursed-lip breathing. Take a rest if needed.



4. Have your bed on casters or rollers for ease in moving.



Kitchen

You don't want to use a good deal of your precious energy making meals and then too tired to eat them.

1. Use a minimum of mixing and measuring tools.
2. Example of a well-equipped kitchen for the pulmonary patient:

Toaster oven	Electric fry pan (Teflon lined)
Electric can opener	2nd electric fry pan with rack in it for steaming
Blender	Electric warming tray
	Microwave oven

3. Leave out items you will use on a daily basis. Don't put away this equipment or any other piece of equipment that you find valuable.
4. Also, leave favorite spices out where they can be easily reached.
5. Several rolls of paper towels and small wastepaper baskets lined with disposable plastic bags placed at strategic spots in your kitchen.

6. Aim for a minimum number of steps.
7. Do not use oxygen around a gas stove while it is on. Use an electric skillet and toaster oven.
8. Having the oven on, changes humidity in room. Most ovens also require bending and lifting of heavy objects.
9. Use simple, easy to prepare recipes. Avoid complicated recipes that require extensive chopping, mincing and clean up.
10. If possible, prepare 2-3 meals at one time. This will conserve energy and clean-up time.
11. Make your own "TV" dinners.
12. When preparing a meal, THINK:
    a. How can I make the minimum amount of dishes and mess to clean up?
    b. How can I take the minimum amount of steps?
    c. How can I minimize lifting, twisting, bending, chopping and cutting?
    d. How can I make an entire dinner using only one or two pots and perhaps a spoon and fork?
13. On the day you shop, do not cook. Eat out or use prepackaged dinners.
14. Do not shop while you're hungry. You'll only end up buying more.

Shopping

1. Map out the supermarket with a list.
2. Try carrying groceries in plastic bags.
3. Do not shop while hungry. You'll end up buying more.
4. Use the Yellow Pages – phone ahead. Avoid unnecessary trips.
5. Get items delivered whenever possible
6. Shop by catalog

Laundry and Ironing

1. If clothes are hung on a line, use a cart on wheels raised to your height to carry the wet clothes.
2. Remember pursed-lip breathing while hanging clothes.
3. Exhale while raising arms to hang each piece.
4. Ironing – use a system and rhythm in ironing; don't waste motions and energy.
5. Do ironing while sitting. Adjust the ironing board to a comfortable work height.
6. Use an iron cord minder or a cordless iron.

7. Cut down the number of wash loads. Try buying clothes with the same washing and drying instructions.
8. Buy "wash and wear" clothes. Don't use energy ironing

Special Activities

1. Pushing and pulling heavy doors should be done while exhaling.
2. Exhale while lifting. If the weight is too great, get help. Don't lift alone.
3. When changing body position, rest after each move if necessary. Exhale when you move from lying down to sitting - rest. Exhale while you move from sitting – rest to standing – rest. Stand still for a few moments before walking, if necessary.
4. Never let yourself be hurried beyond your capabilities, yet always extend your activities as far as possible.

Eliminate the causes of personal tension. Learn to live with problems and you will live longer.

Summary

1. Always use pursed-lip breathing techniques to minimize shortness of breath.
2. Use pursed-lip breathing techniques throughout an activity.
3. Do the strenuous work during the **exhalation phase** of breathing.
4. Pace yourself.
5. Take frequent rest breaks throughout activities that require more energy as well as between activities.
6. Organize your time. Do not complete everything in a single day. Space out activities throughout the week to conserve energy.
7. Simplify, simplify, simplify!