

# How to Use Inhaled Medications



FOR ASTHMA AND COPD

# introduction

Inhaled medications are an important part of controlling and treating asthma and chronic obstructive pulmonary disease (COPD). The medication goes directly into your lungs (where it is needed), so it is very effective and causes few side effects.

This booklet discusses:

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## INHALED MEDICATIONS FOR ASTHMA

The most common types of inhaled medications to treat asthma are:

- Inhaled corticosteroids
- Bronchodilators

**Inhaled corticosteroids** are the primary control medication for asthma.

Examples include:

- Beclomethasone (*QVAR*)
- Mometasone (*Asmanex*)
- Fluticasone (*Flovent*)

These medications help control swelling or inflammation in the breathing tubes. They can prevent an asthma flare-up. Though they do not relieve symptoms right away, using these medicines as prescribed is one of the best ways to keep asthma in good control.

**Bronchodilators** are also called quick relief medicines (“relievers”).

Examples include:

- Albuterol HFA (*ProAir HFA*)
- Proventil HFA (*Ventolin HFA*)

These medications relax the muscles around the breathing tubes to quickly help with the symptoms of an asthma flare-up. They can help reduce the effect of asthma triggers you can’t avoid, or they may be used before exercise. Bronchodilators provide quick relief, but used alone, they do not help control or prevent a flare-up from asthma or COPD.

## INHALED MEDICATIONS FOR COPD

The most common types of inhaled medications to treat COPD are:

- anticholinergic medications
- bronchodilators
- inhaled corticosteroids

**Anticholinergic medications** are the primary therapy used in COPD. These medications stop the tightening of the muscles around the large airways (bronchi). They may be either long acting (for example, *Spiriva*) or short acting (such as *Atrovent*). Short-acting anticholinergic medications work in about 15 minutes and last for 6-8 hours.

**Bronchodilators**, such as albuterol (*ProAir*), are short-acting, and are used when more immediate relief of symptoms is needed.

**Inhaled corticosteroids** may be used when COPD is hard to control or if you have a major reversible component to airflow.

**Other medications** may also be used depending upon your stage of COPD and symptom control. They may include:

- Long acting bronchodilator medications such as salmeterol (*Serevent*).
- Combination products (long-acting bronchodilators plus corticosteroid) such as *Advair* and *Symbicort*.

If you use more than one inhaled medicine at a time, use the bronchodilator (“reliever”) first. This opens up the breathing tubes so the other medications can get to the lungs better. If you have questions about using inhaled medications, ask your doctor or pharmacist.

## OXYGEN THERAPY

This treatment provides more oxygen to patients who have severe COPD and low levels of oxygen in their blood. Depending on your COPD, you may need oxygen therapy sometimes or all of the time (long-term). Oxygen therapy can be done in a hospital (if you have sudden difficulty breathing), or by using a portable system that you keep with you (if your oxygen levels are too low in general). Your need for oxygen is determined by your response to therapy and tests such as spirometry and oxygen level desaturation with activity. Oxygen therapy helps you breathe more easily, feel better, and reduces the risk of death from a lack of oxygen.

With oxygen therapy, oxygen enters your body either through a tube and prongs that go under your nostrils or through a mask that covers your nose and mouth. The three most common forms of the oxygen supply are:

- oxygen concentrators
- oxygen-gas cylinders
- liquid-oxygen devices

### When to use oxygen therapy

If your COPD is mild or moderate, you may only need to use oxygen at certain times. Oxygen treatment may be especially useful during:

- **exercise.** Oxygen levels in your blood may only drop when you exercise or increase your activity. Using oxygen therapy while you exercise may give you more strength and help you breathe more easily.
- **sleep.** When you sleep, your breathing naturally slows down because your body does not need as much oxygen. With COPD, sleep-related breathing disorders and low blood-oxygen levels are more common. Using oxygen therapy during sleep can help.
- **air travel.** Oxygen levels in airplanes are safe for most people. If you use oxygen or have low oxygen levels in your blood, you may need oxygen when you fly. Talk with your doctor and an airline representative before traveling with an oxygen tank.

Oxygen treatment is very safe. But, there are some important things to remember to avoid any problems with your oxygen supply. It is important not to smoke. Oxygen is flammable and can explode. It is necessary to stay away from fire hazards or open flames, such as lit cigarettes or pipes, or smoke from tobacco products.

The oxygen supply company will make sure you have all of the equipment you need and will show you how to use it safely and correctly.

**Warning:** *The use of tobacco products and exposure to toxic fumes will reduce the effectiveness of treatment for both asthma and COPD. If you smoke, we can assist you to quit.*

## delivery methods for inhaled medications

There are three methods for taking inhaled medications. They include:

- metered dose inhalers (MDIs)
- dry powder inhalers (DPIs)
- nebulizers

You and your doctor will select the method that works best for you or your child. Each method is described below.

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### HOW TO USE AND CARE FOR YOUR METERED DOSE INHALER (MDI)

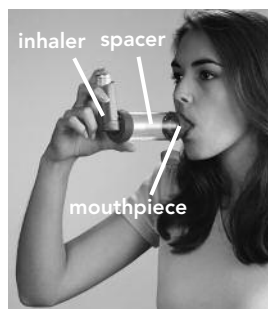
MDIs deliver medicine as a spray. They are sometimes called “inhalers” or “puffers.” Your MDI works best when used with a spacer. **A spacer** is a special device that increases the amount of medicine that gets directly into your lungs, so the medicine works better. Less medicine ends up in your mouth and throat, and there are fewer side effects. It is also easier to use an MDI with a spacer because you do not have to coordinate puffing with breathing.

There are a number of types of MDIs and spacers. It is important to use your inhaler and spacer correctly to get the medication into your lungs. Ask your doctor to check the way you or your child use(s) the inhaler and the spacer together.

## How to use a metered dose inhaler and AeroChamber spacer

Follow these steps or give these instructions to your child:

1. Stand up straight.
2. Take the cap off the inhaler.
3. Shake the inhaler well and insert the mouthpiece of the inhaler in the spacer.
4. Breathe out normally.
5. Place the mouthpiece of the spacer in your mouth between your teeth, with your tongue underneath. Make sure your lips make a tight seal around the mouthpiece.
6. Press down once on the medicine canister, releasing one “puff” or dose of medicine into the spacer. Do not release more than one puff at a time.
7. Breathe in slowly and deeply from the spacer. Fill your lungs with as much medicine and air as possible.
8. Take the spacer out of your mouth and hold your breath.
9. Slowly count to 10 while you hold your breath.
10. Breathe out slowly through your mouth.
11. If you are taking more than one puff of quick-relief medicine, it may help to wait at least one minute between puffs.
12. When you are done taking the medicine, take the inhaler out of the spacer and replace the cap on the mouthpiece of the inhaler. Be sure to rinse out your mouth with water if you are using an inhaled steroid (for example, QVAR, Flovent, or Asmanex).



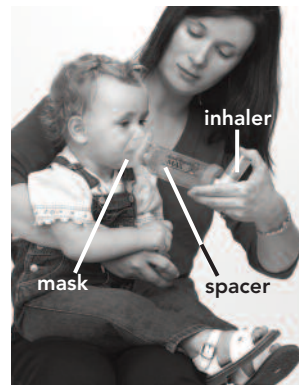
### How to use a metered dose inhaler and AeroChamber spacer with mask

If you have difficulty holding your breath or taking deep breaths, using a mask will allow you to breathe in a couple of times to get the right amount of the medicine. If you have COPD, your doctor or pharmacist may suggest that you use a mask to help get enough medicine into your lungs when using an inhaler.

Using a mask can also be helpful with young children, especially babies and toddlers. Before starting, seat your infant or toddler comfortably on your lap with the child's head resting against your chest.

To use your inhaler with a mask, follow the steps below.

1. Shake the inhaler and remove the inhaler cap.
2. Hold the inhaler upright and insert the inhaler into the spacer.
3. Place the mask spacer securely over your or your child's mouth and nose, making sure there is a good seal. The mask must fit tightly or snugly, with no gaps between the mask and the skin.
4. Press down on the inhaler to spray one puff of medication into the spacer.
5. Breathe in and out normally, or have your child breathe in and out normally for 6 breaths. (It is okay if your child cries. It takes a deep breath to cry.)
6. If you or your child needs another puff of medication, wait one minute and repeat steps 3-5.
7. When you or your child is done taking the medication, take the inhaler out of the spacer and replace the cap on the mouthpiece of the inhaler.





### Caring for a metered dose inhaler (MDI) and AeroChamber spacer

- Hand wash the inhaler's plastic holder and the spacer with mild soap and warm water at least once a week. (Take the canister out of the plastic holder before you wash it.)
- Let them air dry.
- Do not put an inhaler or spacer in the dishwasher.

### How to use a metered dose inhaler with EZ Spacer

1. Pull open the handle on top of the collapsible plastic bag. Pull down and twist the reservoir bag gently to open the bag fully.
2. Slide the bar on the top to the right to extend the mouthpiece.
3. Shake the inhaler. This mixes the medication properly. Remove it from its plastic case.
4. Insert the inhaler into the hole next to the handle.
5. Instruct your child to gently breathe out.
6. Have your child put the mouthpiece in his/her mouth between the teeth and close his/her lips around it.
7. Press the inhaler once to deliver one puff of the medication.
8. Have your child breathe in slowly and deeply over 3-5 seconds. The EZ Spacer bag will collapse.
9. Have your child hold his/her breath for ten seconds or if your child is unable to hold his/ her breath, have your child breathe in and out slowly five times.
10. Have your child resume normal breathing.
11. Repeat steps 5-9 when more than one puff is prescribed.
12. Always rinse your child's mouth after using inhaled steroids.



### Cleaning and care for the *E-Z Spacer*

1. Clean the *E-Z Spacer* by hand at least once a week.  
The *E-Z Spacer* is not dishwasher safe.
2. Remove the bottom plate of the spacer by using your fingernail or twisting a coin in the slot.
3. Pull open the handle and slide the bar to the right to extend the mouthpiece. Pull down and twist the reservoir bag gently.
4. Immerse the spacer and end plate in a basin with water and mild detergent.
5. Clean the inside, outside and end plate.
6. Rinse the spacer and end plate in fresh water.
7. Shake off any excess water.
8. Air dry on a clean towel and wait until it is dry before storing.  
The *E-Z Spacer* should not be stored near heat.

### How to use a metered dose inhaler with *InspirEase*

To use the *InspirEase*, your child must be able to follow instructions to inhale through the mouth at the right time.

Usually children must be over 6 years of age.

Follow these steps:

1. Connect the mouthpiece to the bag by lining up the tabs with the opening in the bag. Push in and turn to lock.
2. Gently open the bag by untwisting and expanding.
3. Shake the inhaler. Remove it from its plastic case and insert it firmly into the plastic holder directly in front of the bag portion of the *InspirEase*.
4. Have your child breathe out as much of his/her air as possible.
5. Have your child place the mouthpiece into his/her mouth, gripping it gently with lips and teeth.
6. Press down on the inhaler to release the medication into the bag.



7. Have your child breathe in slowly through the mouthpiece. If you hear a whistling sound, have your child breathe slower until no sound can be heard.
8. Have your child hold his/her breath while you count slowly to 5.
9. Have him or her breathe out slowly into the bag, filling it with air.
10. Again, have your child breathe in slowly through his/her mouth; hold the breath for a count of 5 and breathe slowly out into the bag, causing it to fill again.
11. Have your child rest. Repeat steps 4-10 when more than one puff is prescribed.

### **Cleaning and Care for the *InspirEase***

1. Disconnect and clean the *InspirEase* mouthpiece thoroughly with warm, running water. The *InspirEase* is not dishwasher safe.
2. Shake off excess water.
3. Air dry on a clean towel and wait until it is dry before storing. The *InspirEase* should not be stored near heat.
4. Do not clean the collapsible plastic bag. It should be replaced every 4 weeks or as needed.
5. The mouthpiece should be replaced every six months or when it no longer works correctly.

### **About Albuterol HFA inhalers**

Albuterol inhalers have changed from CFC (chlorofluorocarbon) to HFA (hydrofluoroalkane). CFC and HFA are propellants that push the albuterol into your lungs. HFA is more environmentally friendly. This change does not affect how well your albuterol medicine works. The HFA inhaler has a softer, warmer spray and may taste different. Even though the spray may not feel as strong, the medicine works just as well as a CFC inhaler.

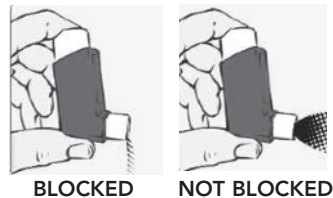
## How to use your Albuterol HFA inhaler

The first time you use your HFA inhaler, you will need to prime it. You will need to re-prime it if it has been more than two weeks since you last used it. Follow these instructions:

1. Shake the inhaler well.
2. Remove the mouthpiece cap.
3. Spray 3 times into the air, away from your face.

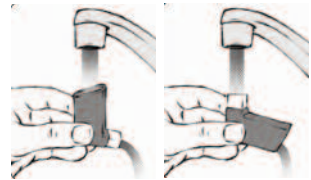
## Cleaning your Albuterol HFA inhaler

It is important to wash your inhaler mouthpiece at least once a week to prevent build-up and clogging. If it is not cleaned regularly, the inhaler may stop working.



To clean your inhaler:

1. Take off the canister and mouthpiece cap.
2. Wash the mouthpiece under warm running water for 30 seconds. Run water through both the top and bottom of the mouthpiece. Never immerse the canister in water.
3. Dry the mouthpiece by shaking off any water. Let it air dry completely.



Wash mouthpiece under warm running water.

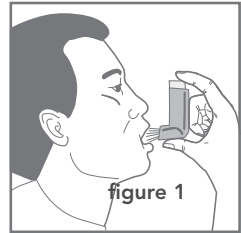
- The mouth piece has a lower chance of clogging if it is totally dry.
4. When the mouthpiece is dry, replace the canister and the mouthpiece cap.

## How to use a metered dose inhaler without a spacer

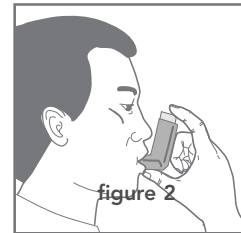
**Caution:** We do not recommend using your inhaler without a spacer. Less medication actually gets into your lungs. A spacer can also help prevent side effects. Always use a spacer with ipratropium (Atrovent) inhalers. Atrovent will cause blurred vision if it gets into the eyes.

If you must use your inhaler without a spacer, follow these instructions: open mouth or closed mouth technique

1. Remove the cap and hold the inhaler upright.
2. Shake the inhaler.
3. Tilt your head back slightly and breathe out.
4. Position the inhaler as shown (figure 1), with your mouth open wide. Hold the inhaler two fingers' width from your mouth. Or seal your lips around the mouthpiece (figure 2).



5. Press down on the inhaler to release the medication as you start to breathe in slowly and deeply through your mouth (over 3-5 seconds).
6. Take the inhaler out of your mouth and close your mouth.
7. Hold your breath as long as you can, up to 10 seconds to allow the medicine to reach deeply into your lungs.
8. Breathe normally.
9. Wait about 30 seconds between puffs. Put the protective cap on the mouthpiece of the inhaler when you are finished.



Always rinse your mouth after using inhaled steroids (for example, QVAR, Flovent, or Asmanex). Review the instructions included with the packaging of your inhaler for more tips on proper use.

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## HOW TO USE AND CARE FOR YOUR DRY POWDER INHALER (DPI)

The DPI delivers medicine as a powder. You or your child must be able to breathe air in quickly and deeply. Your doctor may not recommend this type of device if you have moderate to severe COPD.

### How to use a dry powder inhaler

There are several types of dry powder inhalers. The most common are diskus, twisthaler, turbuhaler, flexhaler and Handihaler (Spiriva). All of these inhalers are breath activated which means that when you take a deep breath, the medication is released. Always rinse your mouth and spit out the water after inhaling the medication.

All DPIs have dose counters to alert you when the medicine is running out.

### Diskus

Follow these steps or give these instructions to your child:

1. Stand up straight.
2. Release a dose of medicine into the inhaler chamber according to the instructions for your DPI. Do not release more than one dose at a time.
3. After you have released the medicine, be sure not to turn the DPI over. The medicine might fall out. Also, do not blow into the DPI.
4. Breathe out first and then put your mouth completely over the inhaler opening.
5. Breathe in the dry powder quickly and deeply.
6. Hold your breath for 10 seconds.
7. When you are done taking the medicine, close the inhaler.



### Twisthaler®

1. Gently breathe out.
2. Seal your lips around the mouthpiece of the Twisthaler.
3. Inhale rapidly and deeply. Continue to take a full, deep breath.
4. Take the Twisthaler out of your mouth while you hold your breath for 10 seconds.



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5. Breathe normally. Make sure you do not breathe into the Twisthaler.
6. Close the Twisthaler by twisting on the cap. The arrow on the case should line up with the dose counter when the Twisthaler is closed. Keep the cap on the Twisthaler when not in use to keep the Twisthaler clean and dry.
7. Repeat steps 1-6 when more than one puff is prescribed.

### **Turbuhaler® or Flexhaler®**

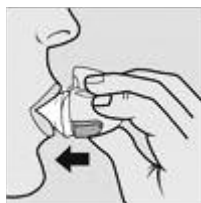
1. Unscrew the cap.
2. Hold the Turbuhaler or Flexhaler with the mouthpiece up.
3. Turn the bottom all the way to the right and back to the left until you hear it click. This means the medication is loaded and ready.
4. Hold the inhaler away from your mouth and gently breathe out.
5. Seal your lips around the mouthpiece.
6. Inhale rapidly and deeply. Continue to take a full, deep breath.
7. Breathe normally.
8. Repeat steps 1-7 when more than one puff is prescribed.

### **Handihaler®**

This device is designed for Spiriva capsules only. Each capsule is in a package called a "blister." Tear along the perforation to separate a single dose. Carefully peel back the foil from the blister and tip the capsule out.

1. Open the cover of the HandiHaler by pressing the green button on the side and lift the cover.
2. Open the mouthpiece by lifting the mouthpiece ridge.
3. Place the capsule in the hole in the center of the HandiHaler and close the mouthpiece. You will hear a click when it is closed.
4. Leave the cover open.
5. Hold the Handihaler with the mouthpiece up and press the green button on the side firmly to pierce the capsule.

6. Close the mouthpiece until you hear a click. Leave the dust cap open.
  7. Breathe out completely. Never blow into the HandiHaler.
  8. Hold the inhaler by the base without blocking the air intake vents. Put it in your mouth and close your lips around the mouth piece.
  9. Breathe in slowly and deeply until your lungs are full.
  10. Take the inhaler out of your mouth and hold your breath as long as is comfortable. Then resume normal breathing.
- Repeat steps 7-10 to make sure that you get the full dose of the medication. After you have finished taking your daily dose of SPIRIVA, open the mouthpiece again. Tip out the used capsule and discard.



### Caring for a dry powder inhaler

It is important to keep your dry powder inhaler clean and dry. Use a cloth to wipe the mouthpiece after each use and store your inhaler in a dry place.

Cleaning instructions for the HandiHaler:

- Clean once a month.
- Rinse the complete inhaler with warm water to remove any powder.
- Do not use cleaning agents or detergents.
- Do not place the HandiHaler in the dishwasher for cleaning.
- Dry the HandiHaler thoroughly by tipping the excess water out on a paper towel and air-dry afterwards, leaving the dust cap, mouthpiece, and base open.
- It takes 24 hours to air dry, so clean it right after you use it and it will be ready for your next dose.
- Do not use the HandiHaler device when it is wet. If needed, the outside of the mouthpiece may be cleaned with a moist but not wet tissue.



## HOW TO USE AND CARE FOR YOUR NEBULIZER

Nebulizers are machines that deliver medicines as a fine mist. They are often used in the clinic or emergency room to give a 5 to 15 minute breathing treatment. They are also used at home for people who cannot use an inhaler with a spacer (especially very young children). Nebulizers are bulky and less convenient than using an inhaler.

### How to use a nebulizer

Follow these steps to give yourself or your child a nebulizer treatment:

1. Place the nebulizer on a flat surface.
2. Plug the unit into an outlet.
3. Connect the tubing to the nebulizer machine.
4. Put the medication into the nebulizer cup and screw the cap on securely.
5. Connect the other end of the air tubing to the nebulizer cup.
6. Connect the mouthpiece or face mask to the nebulizer cup.
7. When you turn the machine on, check to make sure that a fine mist of medication is coming through the face mask or mouthpiece.
8. Place the mouthpiece in the mouth with the lips sealed around the mouthpiece. Or place the face mask over the mouth and nose. The elastic band will hold the mask in place.
9. Take slow, deep breaths until all the medication in the nebulizer cup is gone.
10. You may need to tap the sides of the nebulizer cup to ensure that all medication is given before you turn off your nebulizer.

### Caring for and cleaning your nebulizer

1. Disconnect the nebulizer cup from the tubing.
2. Open the cup and wash and rinse all pieces with mild dish soap and water. Do not wash or rinse the tubing.
3. Air dry your nebulizer on a clean towel.
4. Store the dried nebulizer cup and tubing in a plastic bag.
5. Once a week, rinse the nebulizer cup in one part vinegar mixed with one part water after washing. Rinse again and let it air dry.

# don't let your medicine run out

## Number of Puffs in a Metered Dose Inhaler

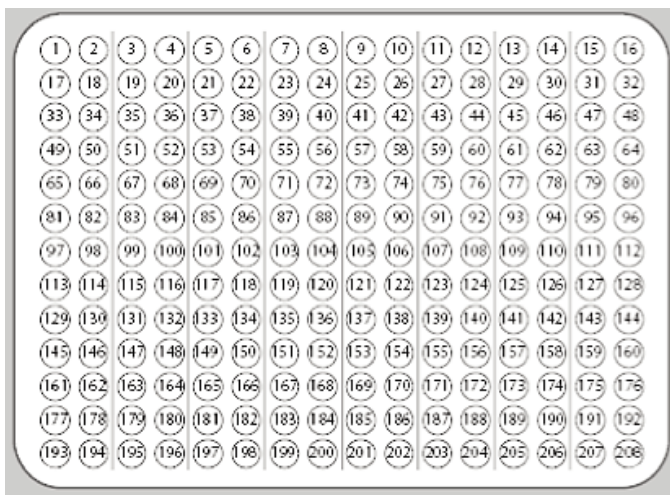
Most inhalers will still deliver puffs even when there is no medicine left. Different inhalers contain different numbers of puffs. Refer to the chart below for the number of puffs in your or your child's inhaler.

Name of Medicine	# of Puffs	Name of Medicine	# of Puffs
ProAir HFA, Proventil HFA, Ventolin HFA (albuterol HFA)	200	Serevent (salmeterol)	60
QVAR (beclomethasone)	120	Atrovent (ipratropium)	200
Asmanex (mometasone)	60 or 120	Cromolyn	112 or 200
Flovent (fluticasone)	120	Tilade (nedocromil)	104
Pulmicort (budesonide)	200		

## Keep track of your puffs to know when your inhaler will be out of medicine.

Here are two ways to keep track:

1. One way is to divide the number of puffs in the canister by the number of puffs used each day. This will give you the number of days the medication will last. Mark this day on your calendar. When this day comes, replace your inhaler.
2. Keep a chart with the inhaler to track how many puffs are left in your or your child's inhaler. Make a check mark in the box each time you or your child takes a puff. If you need to prime your inhaler, count these puffs here too. When the number of check marks equals the number of puffs in the inhaler, your inhaler is empty. Stop using the canister when you have used all of the puffs. You can make a copy of the chart on the next page or make your own.



Some people try to float their inhalers in water to see how much medication is left. **This does not work!** We recommend one of the counting methods.

## additional resources

- Watch our asthma video to review how to use your inhaled medications correctly. To view the video, visit your doctor's home page at [kp.org/mydoctor](http://kp.org/mydoctor) and choose either "Healthy Living Resources" or "Health Tools and Classes."
- *How to manage asthma: A guide for adults and children*
- [kp.org/asthma](http://kp.org/asthma)
- Also at your doctor's home page, use online health tools, view your Preventive Services reminders, check most lab results, and much more.
- Some conditions, including asthma, can be seriously affected by violence or abuse. If you are hit, hurt or threatened by a partner or spouse, there is help. Call the National Domestic Violence Hotline at 1-800-799-7233 or connect to [ndvh.org](http://ndvh.org).

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor. If you have questions or need more information about your medication, please speak to your pharmacist. Kaiser Permanente does not endorse the medications or products mentioned. Any trade names listed are for easy identification only.