



EDUCATIONAL RESOURCES

Breathe It In: Inhaled Medication Formulations in Palliative Care

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Objectives

- Discuss commonly prescribed inhaled medications (including drug delivery devices)
- Identify opportunities for deprescribing, based on patient prognosis and medication appropriateness
- Review patient cases

Respiratory Illness: Common Medications

Beta₂- Agonists

Anticholinergics

Methylxanthines

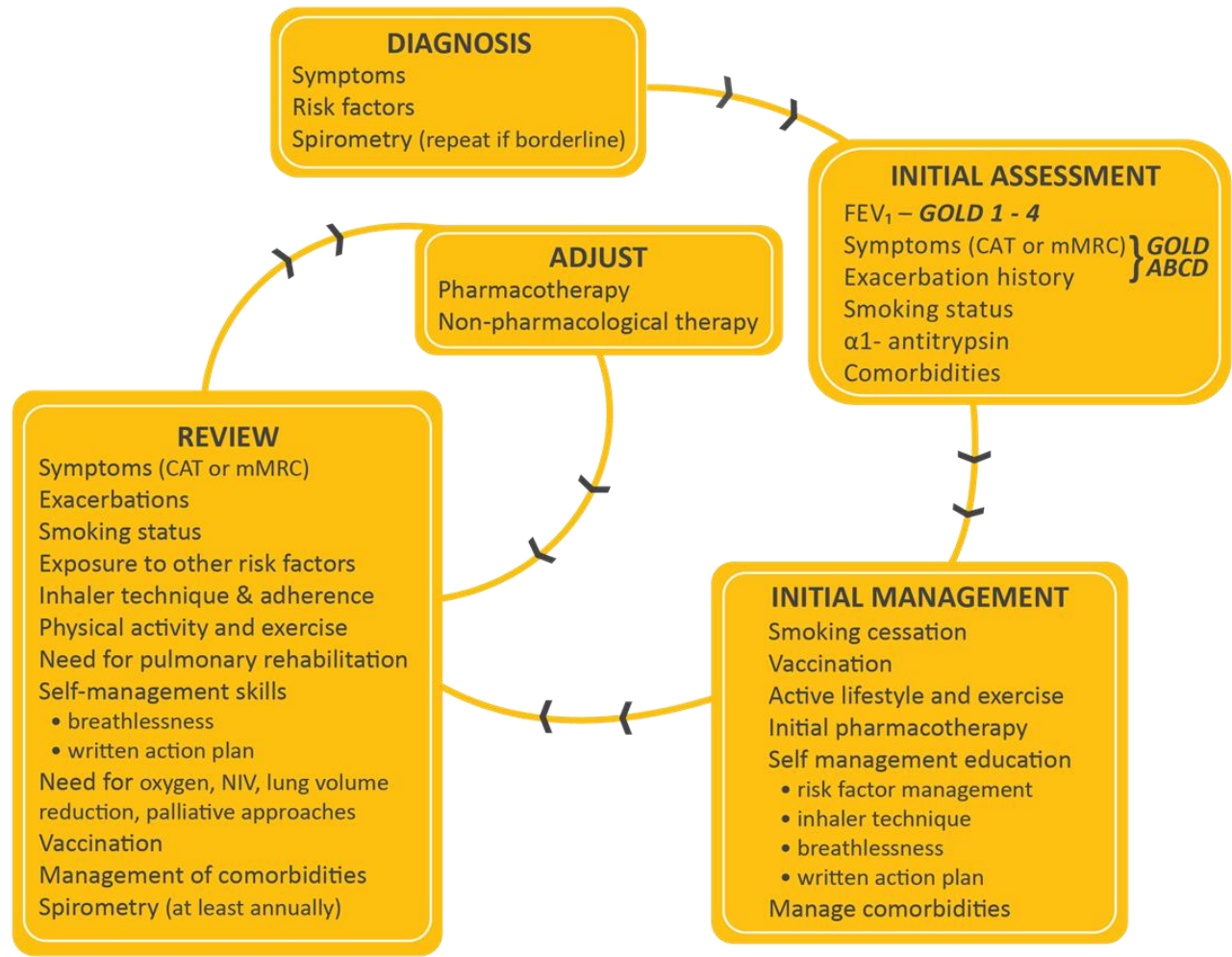
Corticosteroids

Phosphodiesterase-4 Inhibitors

Mucolytics

MANAGEMENT OF COPD

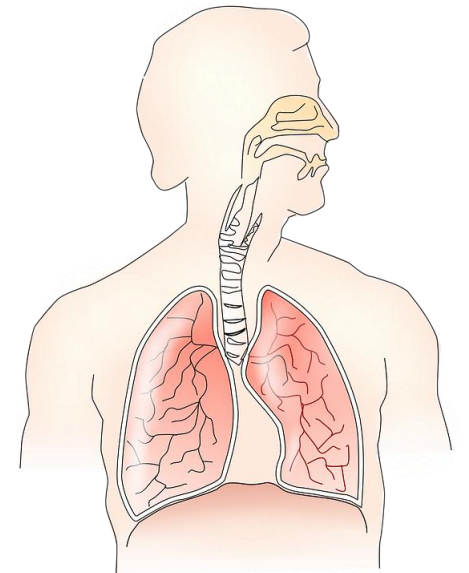
Example:
Management
of COPD



Global Initiative for Chronic Obstructive Lung Disease: Teaching Slide Set 2022.

Inhalers: Preparation

- Prime inhaler
 - Necessary if inhaler not used in a specified number of days
 - Package instructions
- Remove cap
- Visual inspection
 - Look inside mouthpiece for obstructions
- Shake inhaler vigorously prior to use
- Breathe out completely
 - Expel as much air as possible



Metered Dose Inhaler (MDI)

- Pressurized canister of medication
- Plastic holder with mouthpiece
- Reliable, consistent dose of medication with activation
- Common
 - Asthma, chronic obstructive pulmonary disease (COPD), other respiratory illnesses
- Portable, convenient
- Cost-effective
- Little to no preparation required
- Patient difficulties
 - Breath coordination
 - Dose counting



MDI: Inhalation

- Hold inhaler with mouthpiece down
- Place lips around mouthpiece, forming a tight seal
- At initiation of slow, deep inhalation, breathe in through mouth and press down/activate inhaler once
- Continue breathing in slowly and deeply



MDI: Hold Breath

- Remove inhaler from mouth
- Hold breath and slowly count to ten
- Pucker lips and breathe out slowly through mouth
- For inhaled, rescue medications (example: beta₂-agonists), wait about one minute before the next activation
- Put cap back on mouthpiece
- After using inhaler, rinse mouth with water, gargle, and spit
 - Do not swallow the water



Dry Powder Inhaler (DPI)

- Many shapes and sizes
- Commonly used to deliver corticosteroids into the lungs
- Breath-activated (fast, deep breath required)
- Multiple and single dose devices
- Poor inhalation techniques common
 - Continued use
 - Inspiratory flow requirement
- Cannot be used with spacers
- Costly



Dry Powder Inhaler (DPI)

- Remove inhaler cap
- Add or load a dose of medicine, if applicable
- Tilt head back slightly and breathe out slowly and completely
 - Do not breathe out into inhaler
- Place inhaler's mouthpiece in mouth
- Close lips tightly around mouthpiece
- Inhale quickly and deeply through mouth for two to three seconds
- Remove inhaler from mouth
- Hold breath for ten seconds
- Slowly breathe out through pursed lips
 - Do not breathe out into inhaler
- Repeat these steps for necessary second doses



Soft Mist Inhaler

- Device releases slow-moving mist when inhaled
- Contains liquid formulations
 - Like those in nebulizers
- Works well for reaching small airways in the lungs
- Indicator on side of device tracks remaining doses
- No spacer needed
- More medication reaches lungs than with an MDI or DPI
 - Lower dose required
- Difficulty with dose loading



Image: Vecteezy.com

Soft Mist Inhaler

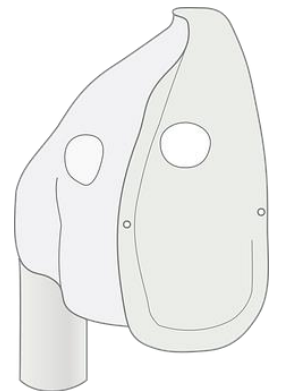
- Open cap after following device-specific preparation instructions
- Breathe out slowly and completely
- Close mouth around mouthpiece
 - Don't close air vents on the side of inhaler
- Breathe in slowly and deeply through mouth while pressing the dose release button
- Inhale mist
- Hold breath for 10 seconds and slowly breathe out



Image: Vecteezy.com

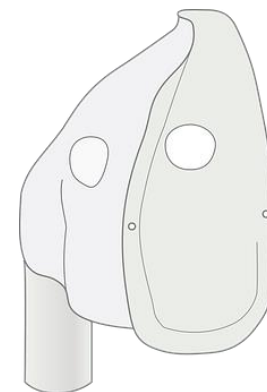
Nebulizer

- Small machine
- Turns liquid medicine into a mist
- Medicine moves into lungs as patient breaths
- Ten-to-15-minute treatments
- Less effort than an inhaler
- Most nebulizers work by using air compressors
- Must be cleaned properly
- Used according to the manufacturer's instructions



Nebulizer

- Wash hands well
- Connect hose to compressor
- Fill the medicine cup with prescription
 - Close the medicine cup tightly and hold the mouthpiece straight up and down
- Attach the hose and mouthpiece to the medicine cup
- Place the mouthpiece in mouth; Keep lips firm around the mouthpiece
- Breathe through mouth until all the medicine is used
 - If needed, use a nose clip to breathe only through mouth
- Small children usually do better wearing a mask
- Turn off machine when done
- Wash cup and mouthpiece with water and air dry



Medication Appropriateness

- Few guidelines exist for determining how and when to discontinue medications
- What is Medication Appropriateness?
 - Medication appropriateness provides a means to evaluate medication need
 - Medication appropriateness refers to whether a medication is useful in an individual clinical situation based on both the attributes of the medication and those of its recipient.



Arch Intern Med 2006

Medication Appropriateness

Is there an indication for the drug?

Is the medication effective for the condition?

Is the dosage correct?

Are the directions correct?

Are the directions practical?

Are there clinically significant drug-drug interactions?

Are there clinically significant drug-disease interactions?

Is there unnecessary duplication with other drugs?

Is the duration of therapy acceptable?

Is the drug the least expensive alternative compared with others of equal usefulness?

Drugs Aging, 2013

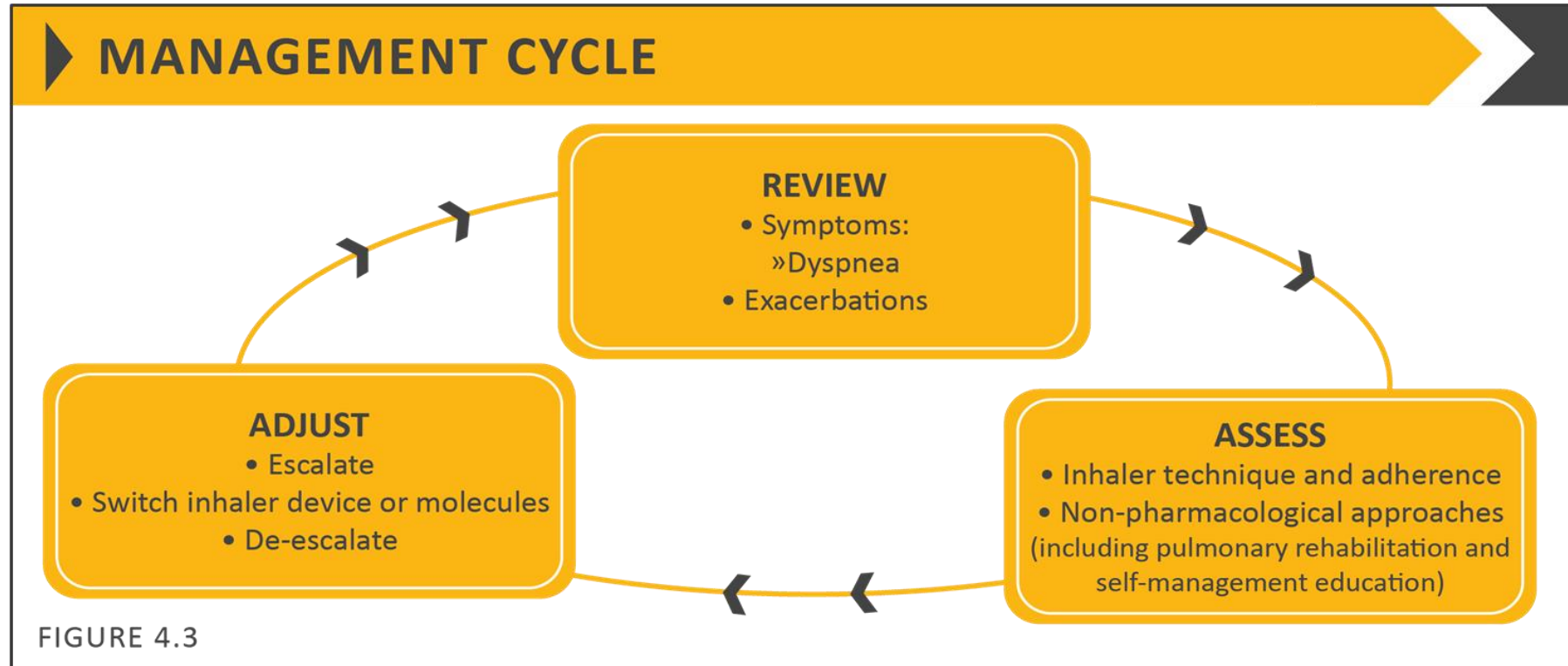
Medication Appropriateness: GOLD Guidelines

▶ KEY POINTS FOR INHALATION OF DRUGS

- The choice of inhaler device has to be individually tailored and will depend on access, cost, prescriber, and most importantly, patient's ability and preference.
- It is essential to provide instructions and to demonstrate the proper inhalation technique when prescribing a device, to ensure that inhaler technique is adequate and re-check at each visit that patients continue to use their inhaler correctly.
- Inhaler technique (and adherence to therapy) should be assessed before concluding that the current therapy requires modification.

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Teaching Slide Set 2022.

Medication Appropriateness: GOLD Guidelines



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Patient Cases

Patient 1:

Recent Hospitalization

Patient 2:

Palliative Care Services

Patient 3:

Hospice Admission

Communication: Words Matter



- Individualized
- Max benefit
- Patient goals
- Decrease burden

- Stop
- Quit
- Cheap
- Non-covered



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Thank you
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