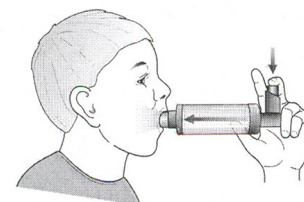




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SHORT ACTING BETA 2 AGONISTS (SABA)

Lisa Romard, RN, MSN, CPNP, ANP, AE-C



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Short-acting Beta 2-agonists medications

Albuterol (Albuterol nebulizer solution, Accuneb®, Proventil® HFA, Ventolin® HFA, ProAir®HFA, NEW: ProAir RespiClick- DPI)

Ventolin was the first SABA on the market in the early 1980's.

Levalbuterol (Xoponex® HFA, Xoponex® nebulizer solution)

****Pirbuterol (Maxair®) not on market now- per FDA Maxair Autohalers are phased out because they contain chlorofluorocarbons or CFCs**

Terbutaline-inhaled Brand forms such as Brethine -*No longer available in the U.S.- still available in tablet/injection

Albuterol and ipratropium bromide combination (DuoNeb® solution)



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What is a SABA? Short Acting BETA2 AGONIST

Classification of drug: Beta2 Agonist: Short Acting bronchodilators

Physiological Action: Bronchodilator

Cellular Action: Chemical compounds that act at the cellular level in organs - acts on adrenergic receptors in the body found in many organ tissues, specifically the beta-2 adrenergic receptors.

beta-2 adrenergic receptors are located in lungs, blood vessels of skeletal muscle, uterus, bladder and GI walls

AKA Quick Reliever or Rescue Medication

Activation of the Beta₂-Receptor

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Albuterol VS Levalbuterol

When the chemical compounds of these drugs are discussed, it is the S & R isomers, or molecular & chemical structure of the compound that differentiate the cellular activity of the drug and different biological effects.

R albuterol- the primary isomer responsible for the bronchodilator effects of racemic albuterol.

S albuterol- which has little or no Broncho-dilating activity

Albuterol= compound of both (50:50) R & S albuterol

Levalbuterol= R albuterol only

Albuterol: the most commonly prescribed

Levalbuterol: Development of levalbuterol was based on the proposed advantages over albuterol

EPR3 REFER TO QUICK RELIEF MEDICATIONS, OR SABA'S. LISTING BOTH ALBUTEROL/

LEVALBUTEROL

<http://www.nhlbi.nih.gov/guidelines/asthma/asthsumm.pdf>-

managing exacerbations flow chart #22



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Albuterol VS Levalbuterol

Both Albuterol/Levalbuterol are sited in the NAEPP, 2007 for use to treat asthma exacerbation- clinician choice for preparation.

Infants and Children: Limited data in ages <2 years: (NAEPP, 2007): Oral inhalation has guidelines for Infants & young children:

<http://www.nlm.nih.gov/medlineplus/druginfo/meds/a603025.html>



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SABA's: OVREVIEW OF PREPARATIONS

Albuterol Preparations

Albuterol MDI – No Generic available now (Generic was with CFC propellant & now BRAND Albuterol preps are with HFA)

: ProAir HFA (counter), Ventolin HFA (Counter), Proventil HFA (no counter), NEW: DPI-PROAIR RESPICLICK (Counter),

Albuterol Sulfate solution:

Albuterol Sulfate Inhalation Solution based on strength & a combination prep w/ ipatropim

Duration: Nebulization/oral inhalation: 3 to 4 hours

Protein binding: 10%

Metabolism: Hepatic to an inactive sulfate

Half-life elimination: Inhalation: 3.8 hours; Oral: 3.7 to 5 hours

Excretion: Urine (30% as unchanged drug); feces (<20%)



Levalbuterol Preparations

Levalbuterol MDI –

HFA preparations brand only -Xopenex HFA (no counter)

Levalbuterol HCl solution:

Levalbuterol/ Xopenex nebulized form is available in both generic & brand preparations & varied strengths

Aerosol: 3 to 4 hours (up to 6 hours in some patients)

Nebulization: 5 to 6 hours (up to 8 hours in some patients)

Absorption: A portion of inhaled dose is absorbed to systemic circulation

Half-life elimination: 3.3 to 4 hours

Time to peak, serum:

Aerosol: Children: 0.8 hours, Adults: 0.5 hours

Nebulization: Children: 0.3 to 0.6 hours, Adults: 0.2 hours



Discuss: inhalation technique, dose counters, priming & cleaning

Storage: out of reach of children

Nebulizer solutions: in the protective foil pouch at room temperature, Protect from light

MDI Preparations: Do not puncture the aerosol container and do not discard it in an incinerator or fire

Store canister between 20° and 25°C (68° and 77°F). Protect from freezing & high heat temperatures and direct sunlight.

DPI: Store PROAIR RESPICLICK at room temperature between 59°F and 77°F (15°C and 25°C).

- Avoid exposure to extreme heat, cold, or humidity.



@ www.drugs.com: Storage: Sol protect from light, MDI no extreme temps: warnings explode if it gets too hot, freeze if too cold



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SABA MEDICATION INFORMATION FOR THE CLINICIAN OR EDUCATOR

Use reputable Sites, Resources For references on approved SABA's

Examples are as:

Publications of drug reference materials:

Package inserts: FDA prescribing information at each manufacturers site

Lexicomp

Harriet Lane

PDR

EPR3: <http://www.nhlbi.nih.gov/health-pro/guidelines/current/asthma-guidelines>

Health Organizations that compile drug reference information

FDA: www.FDA.gov

AAFA: www.aaafa.org

ATS: www.ats.org

AAAAI : www.aaai.org

OR the AAAAI Allergy & Asthma Medication Guide

<http://www.aaai.org/conditions-and-treatments/Treatments/Drug-Guide/Asthma-Medications/saba.aspx>



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SABA- AKA Quick Reliever or Rescue Medication

- Short-acting beta 2-agonists are called "reliever" or "rescue" medicines.
- are recommended for treating early mild , sudden and severe asthma symptoms.
- work within 5-20 minutes and last four to six hours.
- use 15 to 20 minutes before exercise to prevent exercise-induced asthma symptoms.
- Forms of drug: inhalation, most commonly prescribed., Pills, tablets and intravenous forms of the drugs are used but can have more side-effects.
- Monitoring use gives information about asthma symptom control
EX: Medication/symptom logs, ACT & Rules of two



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Drug Action : Bronchodilator

Bronchoconstriction or Bronchospasm :

The condition when bronchi are narrowed due to the airway smooth muscles contraction in response to airway changes thus causing airflow to be decreased or stopped.

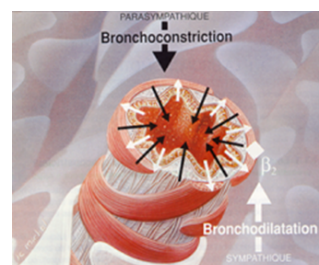
Hyper-reactivity of the bronchioles small airways:

Is a state characterized by easily triggered bronchospasm

Bronchodilator : reverses the airway narrowing by relaxing airway smooth muscles

REMEMBER : USE PLAIN LANGUAGE WHEN EDUCATING YOUR PATIENTS ABOUT THESE TERMS

Accessed 6/10/14:
<http://www.bing.com/images>

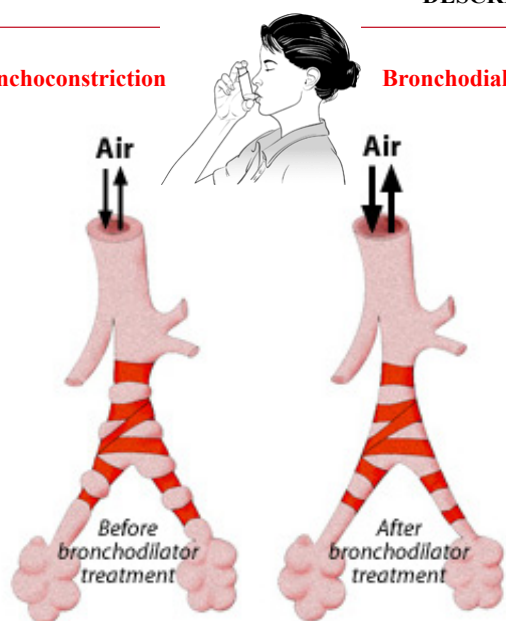


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DESCRIPTIVE PICTURES CAN ASSIST THE LEARNER

Bronchoconstriction

Bronchodilation



SABA's are Quick Relief/Rescue Medicine
This type of medication is a bronchodilator.

The action:
>relaxing the airway smooth muscle.

>open airway & airflow to improve

In plain language:

This medicine stops the squeezing of the air tubes this opens the air tubes & lets air flow better, makes breathing easier



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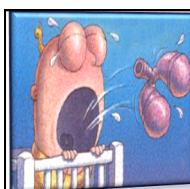
Use handouts, video, web-link, charts, & pictures to
Ensure your tool is Up To Date:

EXAMPLE:

At a Glance poster
by Allergy & Asthma Network
Mothers of Asthmatics (AANMA)



Accessed on 6/26/14 on the web: <http://www.aanma.org/aanma-store/posters/>



Bronchodilator MDI-HFA



ProAir HFA



Proventil HFA



Ventolin HFA



Xopenex (Levalbuterol) HFA

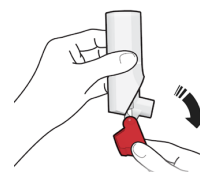


Pirbuterol (Maxair)

**NO LONGER
AVAILABLE**



Nebulizer Solutions



New DPI
Propair RespiClick



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What to teach about SABA's AKA Rescue Medications

Name of medications, how do they identify their rescue medicines
 How it works- why it is used for asthma
 When to use it , monitor response
 How it is used
 Side effects
 Keep track of use, and amount of doses, expiration dates
 How to Store Properly

http://my.clevelandclinic.org/disorders/asthma/hic_treating_asthma_with_bronchodilators.aspx

OVER USE OF THIS MEDICATION IS A RED FLAG

Educate to monitor SABA use

Clinicians to monitor the prescription refills of SABA's.

OBTAIN TEACH BACK



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Ask Me 3

- Is a patient education program
- Designed to improve communication between patients and health care providers Encourage patients to become active members of their health care team
- Promote improved health outcomes.
- The program encourages patients to ask their health care providers three questions:
 1. What is my main problem?
 2. What do I need to do?
 3. Why is it important for me to do this?
- Studies show that people who understand health instructions make fewer mistakes when they take their medicine and they may also get well sooner or be able to better manage a chronic health condition.

Source: <http://www.npsf.org/for-healthcare-professionals/programs/ask-me-3/>



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“WHEN YOU CAN'T BREATHE, NOTHING ELSE MATTERS”

Federal trademark registration **By:** [American Lung Association](#)

