



American
College
of Allergy, Asthma
& Immunology

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Outdated Information and Asthma Myths: Setting the Record Straight,

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Disclosures

- Social Media Medical Editor – American Academy of Allergy, Asthma and Immunology
- Associate Editor – Annals of Allergy, Asthma and Immunology
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- Non-financial:
 - Member – Executive Committee for the Section of Allergy/Immunology, AAP
 - Chair – Education Council, ACAAI

Objectives

- Identify common areas of outdated information related to asthma
- Clarify the diagnosis of “allergies” prior to recommending interventions
- Provide individualized care to each patient with asthma

Before We Begin...



Outdated Info
Anecdotes
Strong Opinions

Individualized
Approaches
Towards
Management

“Research”





🔍 how can I treat asthma |



🔍 how can I treat asthma - Google Search

🔍 how can i treat asthma **without an inhaler**

🔍 how can i treat asthma **cough**

🔍 how can i treat **my** asthma **on my own**

🔍 how can **you** treat asthma

🔍 how treat asthma **attack**

🔍 how can i **permanently cure** asthma

The Harsh Reality

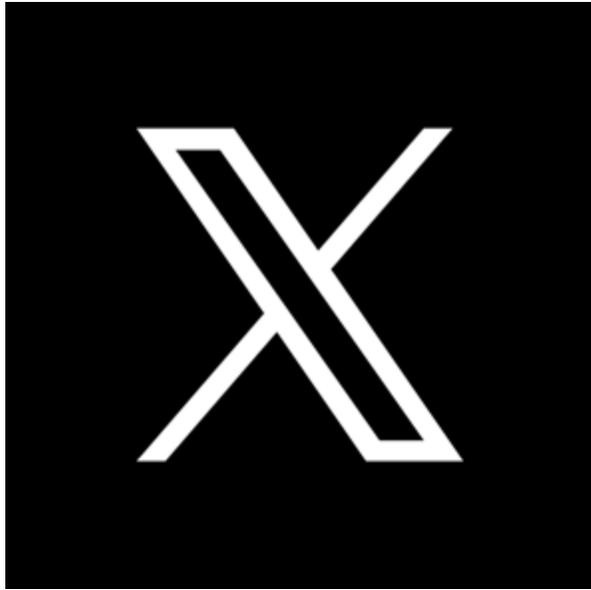
Everyone has instant access to all the world's information

There is "research" to support any position

Critical thinking skills are needed more than ever

Many people are victims of intentional deception

Low health literacy + targeted misinformation = Vulnerability



How Does Social Media KEEP Us Engaged?



Essential oils for asthma



Natalia Sereda/Getty Images

Some studies have suggested that substances in some essential oils may offer health benefits for people with asthma. These essential oils include the following:

Lavender: People use this essential oil for a variety of purposes. A mouse [study](#) published in 2014 showed that lavender essential oil has natural anti-inflammatory characteristics. It may help people with bronchial asthma by reducing the [inflammation](#) of the airways.

Eucalyptus: [Research](#) suggests that eucalyptus oil may have anti-inflammatory properties.

Tea tree oil: In a small [study](#) published in the British Journal of Dermatology, findings showed that tea tree oil could reduce skin inflammation that occurs in response to histamine.

Histamine is a chemical that the body produces in an allergic reaction. Allergens trigger asthma in many people, and tea tree oil might help reduce the inflammation that occurs as a result.

However, the study involved only 27 people, and there is currently no further evidence to support its findings.

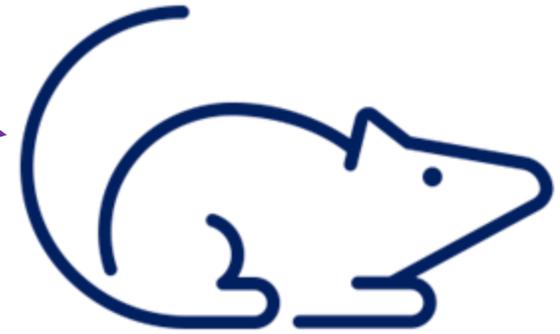
Roman chamomile: Chamomile is another essential oil that [studies](#) have shown to have anti-inflammatory properties.

[Research](#) has also found that chamomile can help relax the bronchi, which are the airways linking the windpipe to the lungs. As a result, it may also relieve coughing.

Pistacia integerrima: Also known as karkatshringi, people in India use this plant to treat asthma, [bronchitis](#), and other conditions.

In a [study](#) published in 2014, scientists used laboratory tests to demonstrate that the essential oil from Pistacia integerrima may help treat bronchial asthma. It may be beneficial due to its antihistaminic activity.

<https://www.medicalnewstoday.com/articles/314245#essential-oils-for-asthma>



Extrapolation from non-asthma studies

Completely random or dead link

Human study with bad methodology

Lessons To Teach Our(selves) Patients

Always

Always....

ALWAYS!!!!!!

Confirm the source

Pseudoscience Bingo!!!

Inflammation	Free radicals	Detox	Celebrity endorsement	Energy
Cleanse	Fatigue	Microbiome	Naturopathic	All natural
Chemical free	Ancient Wisdom	FREE SPACE	Instinctively know best	Organic
Conspiracy	Molecules	Toxins	Cure	'Western' Medicine
Pharma shills	"Science doesn't know everything"	Government/mind control	Miracle	Supplements

Natural Remedies for Asthma



Medically Reviewed by [Carmelita Swiner, MD](#) on November 12, 2022 | Written by [WebMD](#)
[Editorial Contributors](#)

Acupuncture

Biofeedback

Herbs

Asthma diet

Plant based diet

Weight loss

Caffeine

Yoga

Buteyko breathing

Papworth method

What if...

YOU are the source of misinformation?

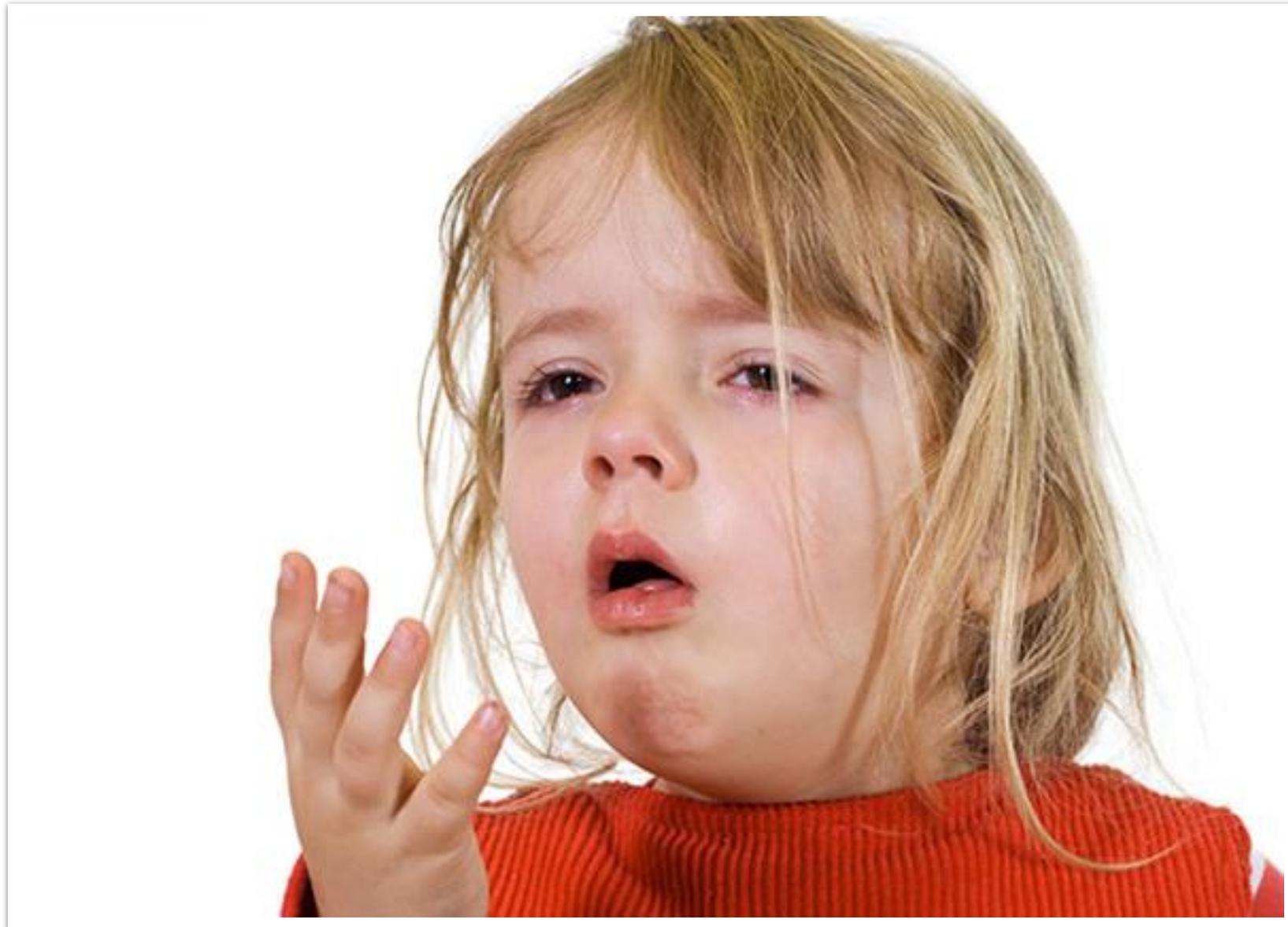


4 year old boy

Coughs for 7-10 days
with every URI

Family is told he is
too young to diagnose
asthma

Referred to allergist to
get “tested” for
asthma



What is Asthma?

Chronic

Inflammation

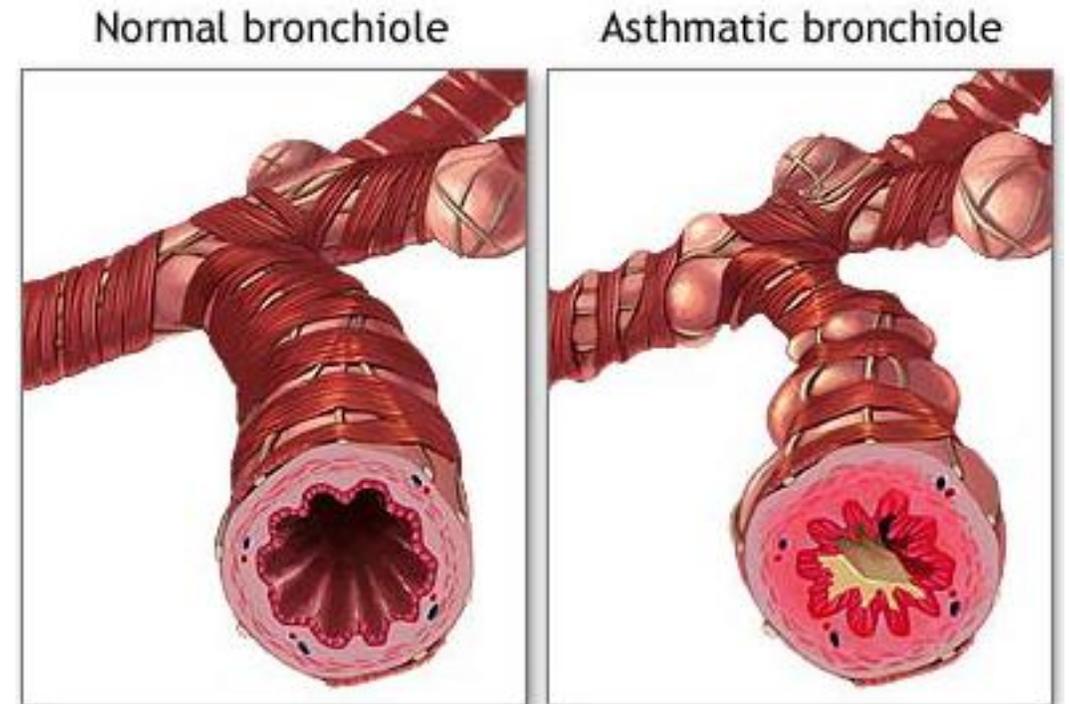
Hyper
responsive
airways

Reversible
airflow
obstruction

Recurrent
symptoms

Airflow Limitation in Asthma

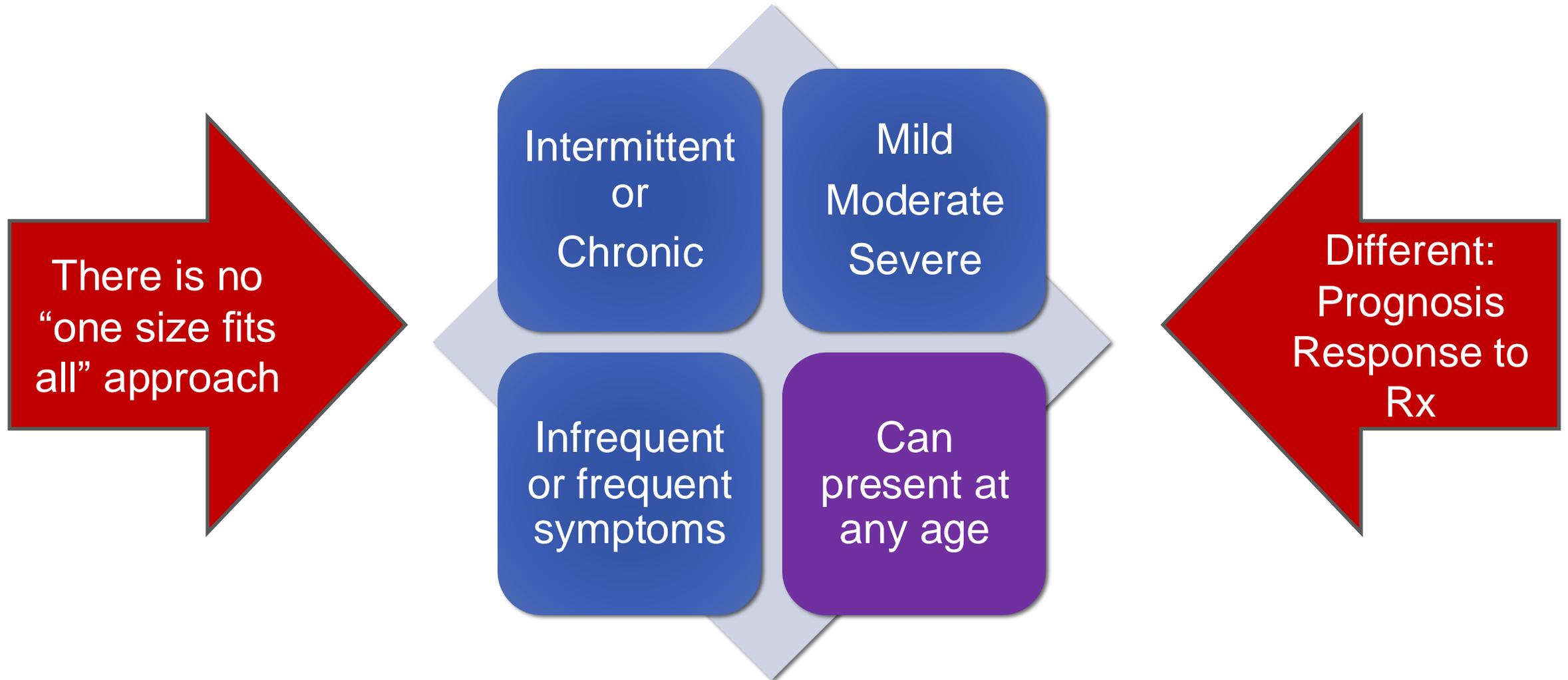
- Bronchoconstriction
- Airway hyperresponsiveness
- Airway swelling
- Increased mucus production



Initial Thoughts...

- Asthma is a clinical diagnosis
- Often underdiagnosed
- Asthma is expected to change over time and throughout the year – so should management

The Many Types of “Asthmas”



Asthma Predictive Index

- Children 3 years old or younger
- 4 separate wheezing episodes in the past year

Major Criteria	Minor Criteria
Parent with asthma Physician diagnosis of atopic dermatitis Detectable IgE to aeroallergens	Physician diagnosed food allergies >4% blood eosinophils Wheezing apart from colds

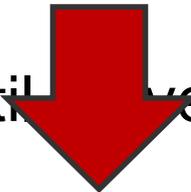
- Prognostic...and now diagnostic tool?
- One MAJOR or TWO MINOR criteria = ~80% chance of persistent asthma at 7 years of age
- Zero criteria = very unlikely to have asthma

Pearl # 1

Child \leq 4 years of age



Coughs for 10-14 days every time they get sick



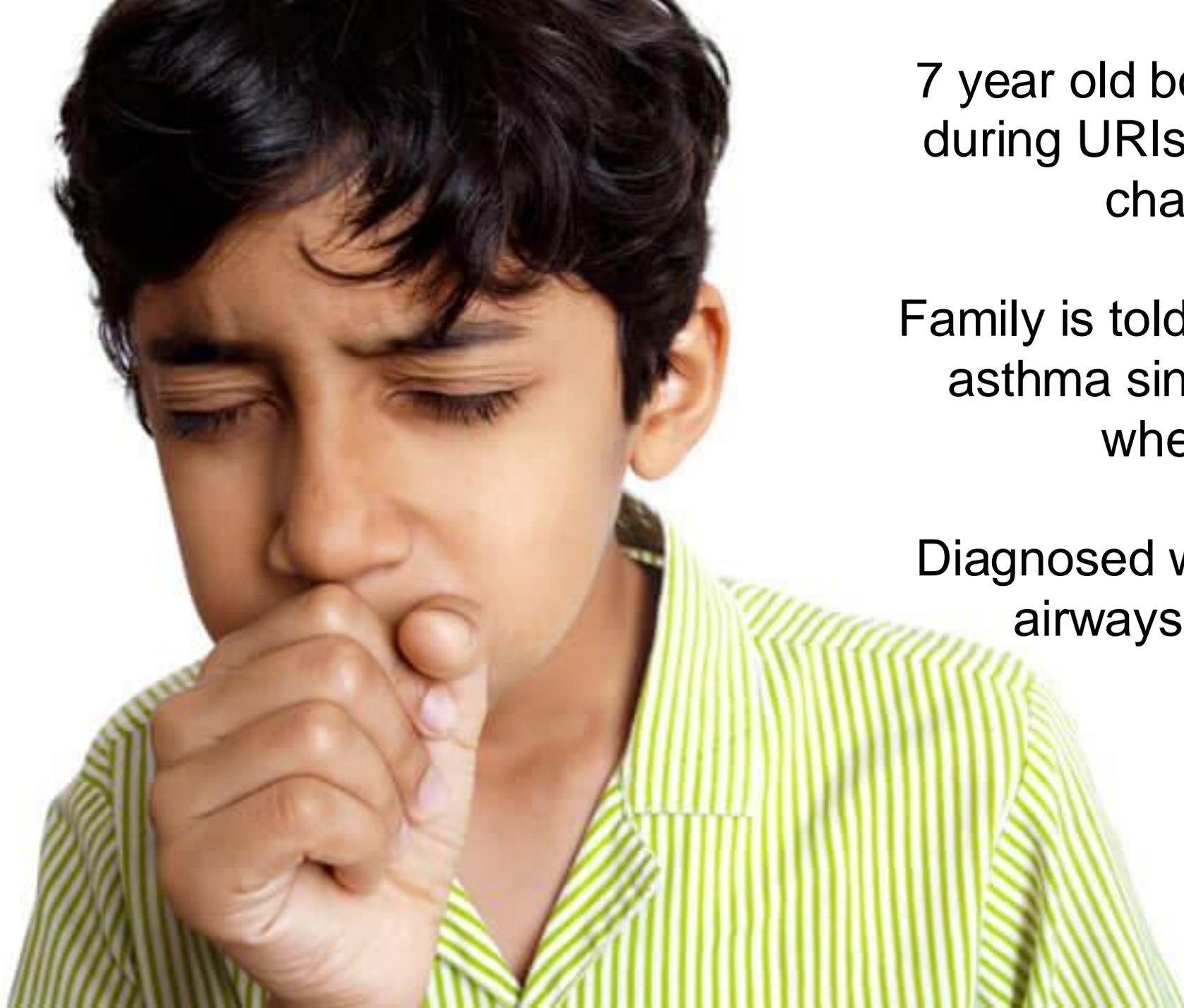
Asthma until proven otherwise*

*ESPECIALLY if they have a history of eczema

Pearl # 2

- Spirometry & FeNO do NOT diagnose asthma
 - Measure IF obstruction +/- eosinophilia are present
- Both can be 100% normal & someone can still have asthma





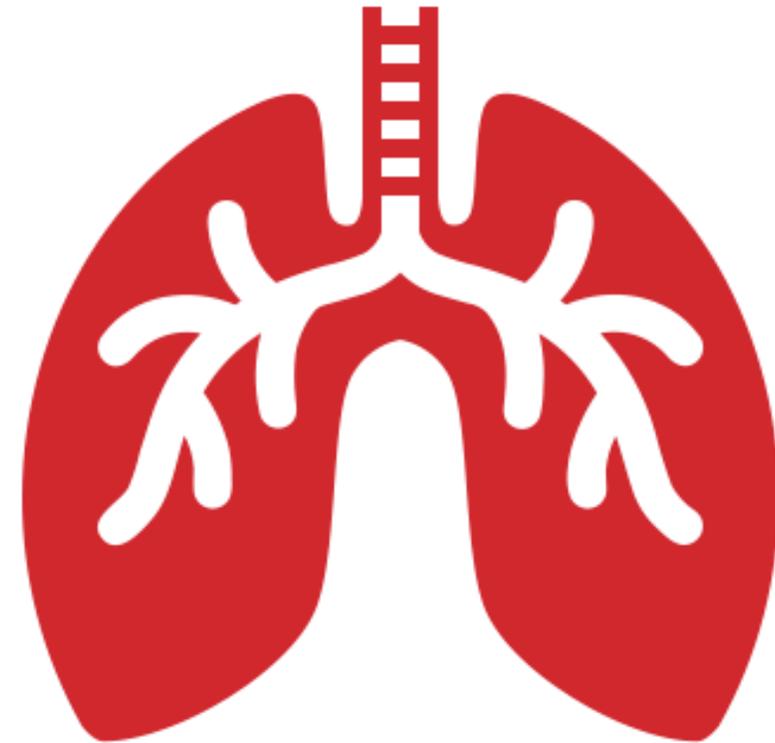
7 year old boy with cough
during URIs and weather
changes

Family is told he can't have
asthma since he never
wheezes

Diagnosed with "Reactive
airways disease"

Asthma Symptoms

- Coughing (night or early morning)
 - **Vomiting after hard coughing**
- Wheezing
- Breathlessness
- Chest tightness
- Difficulty Breathing
- Increased work of breathing
- **Respiratory distress**



Pulmonary Perspective

“Reactive Airways Disease”

A Lazy Term of Uncertain Meaning That Should Be Abandoned

JOHN V. FAHY and PAUL M. O'BYRNE

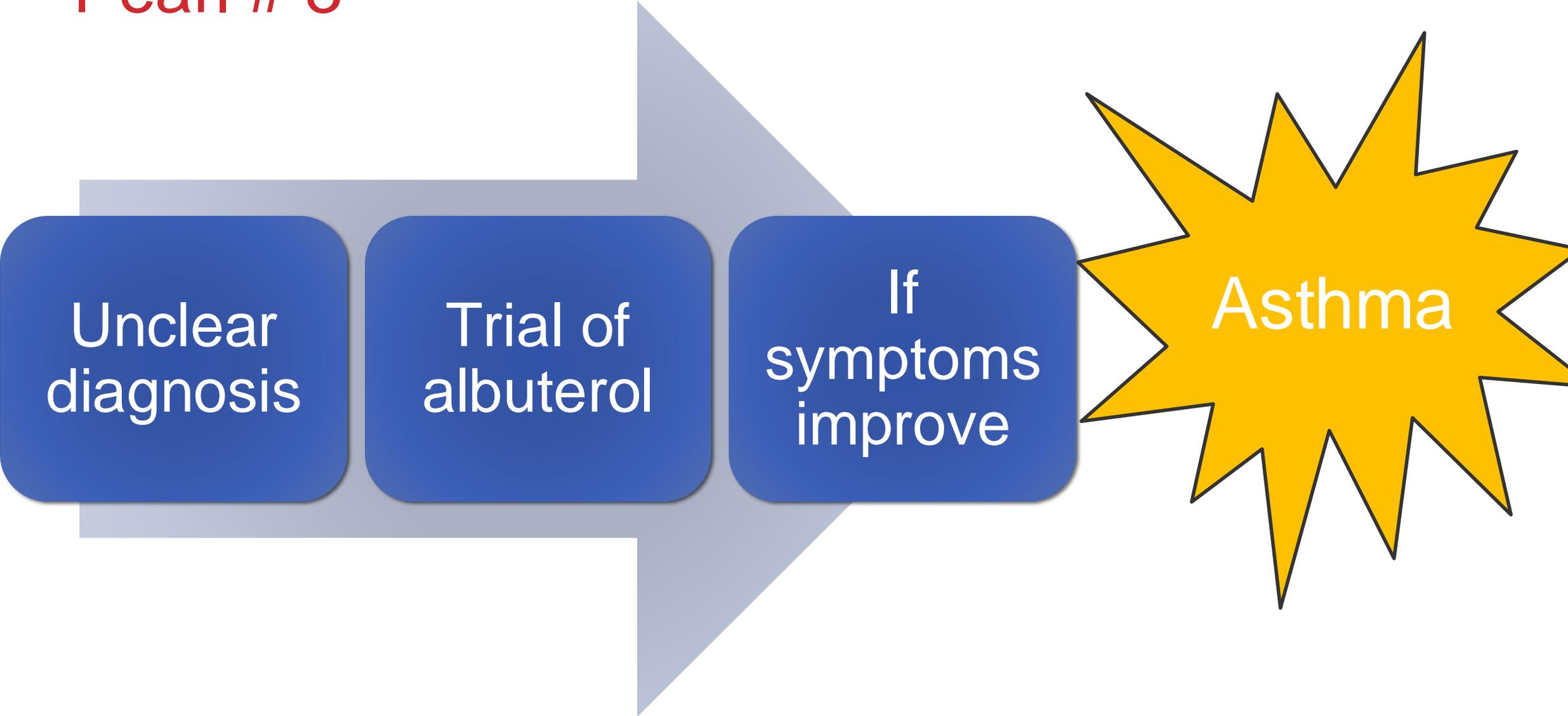
Pearl # 3

Unclear
diagnosis

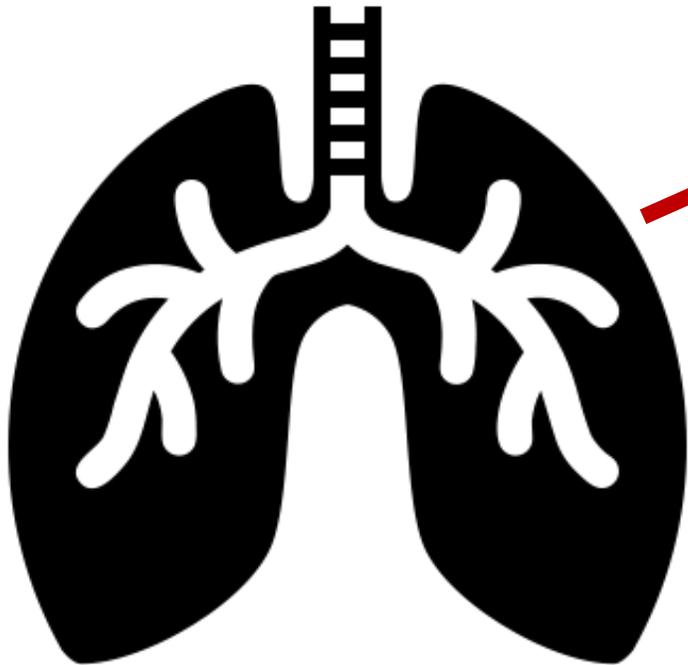
Trial of
albuterol

If
symptoms
improve

Asthma



Which TYPE of Asthma Does Each Person Have?

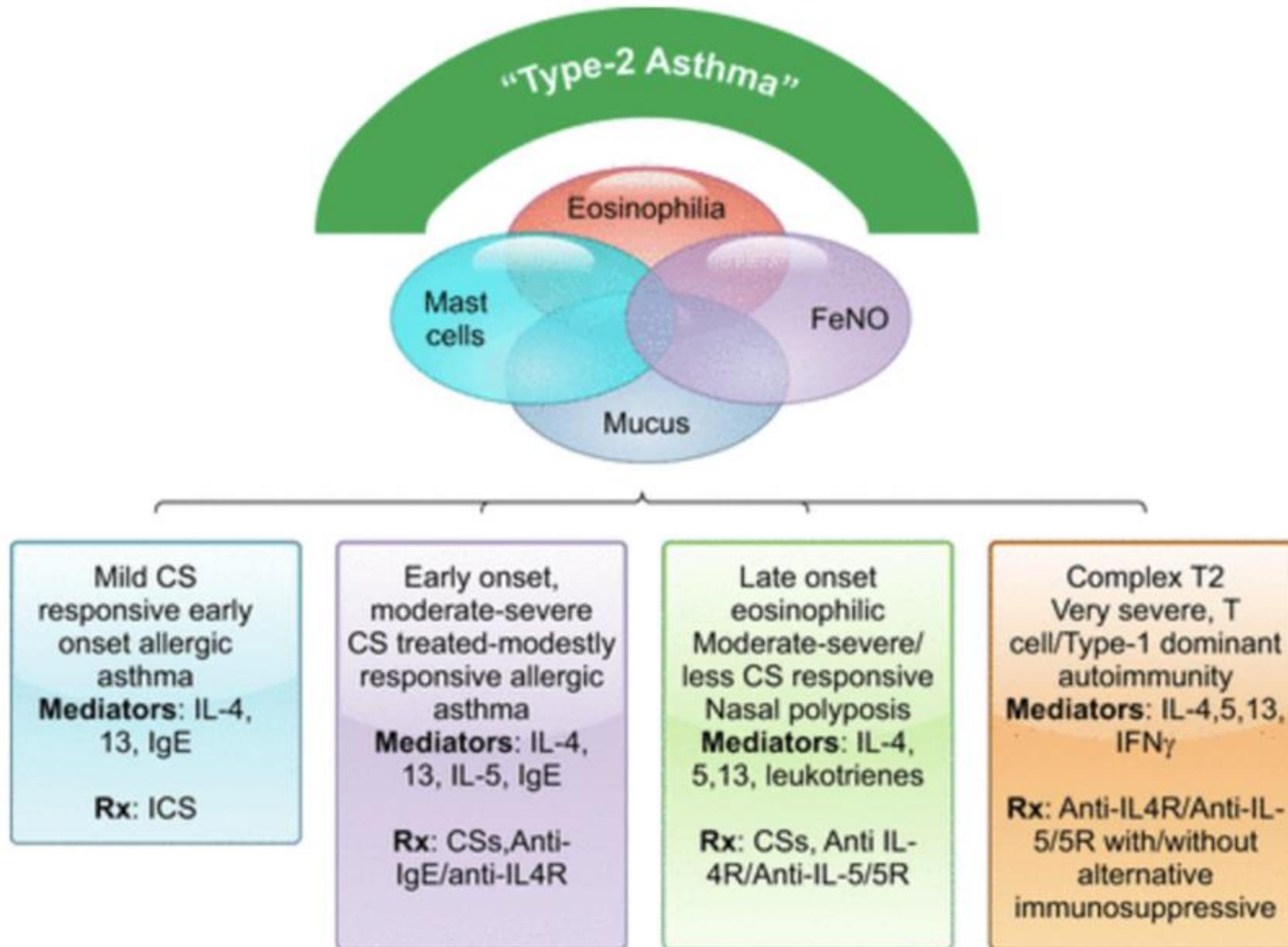


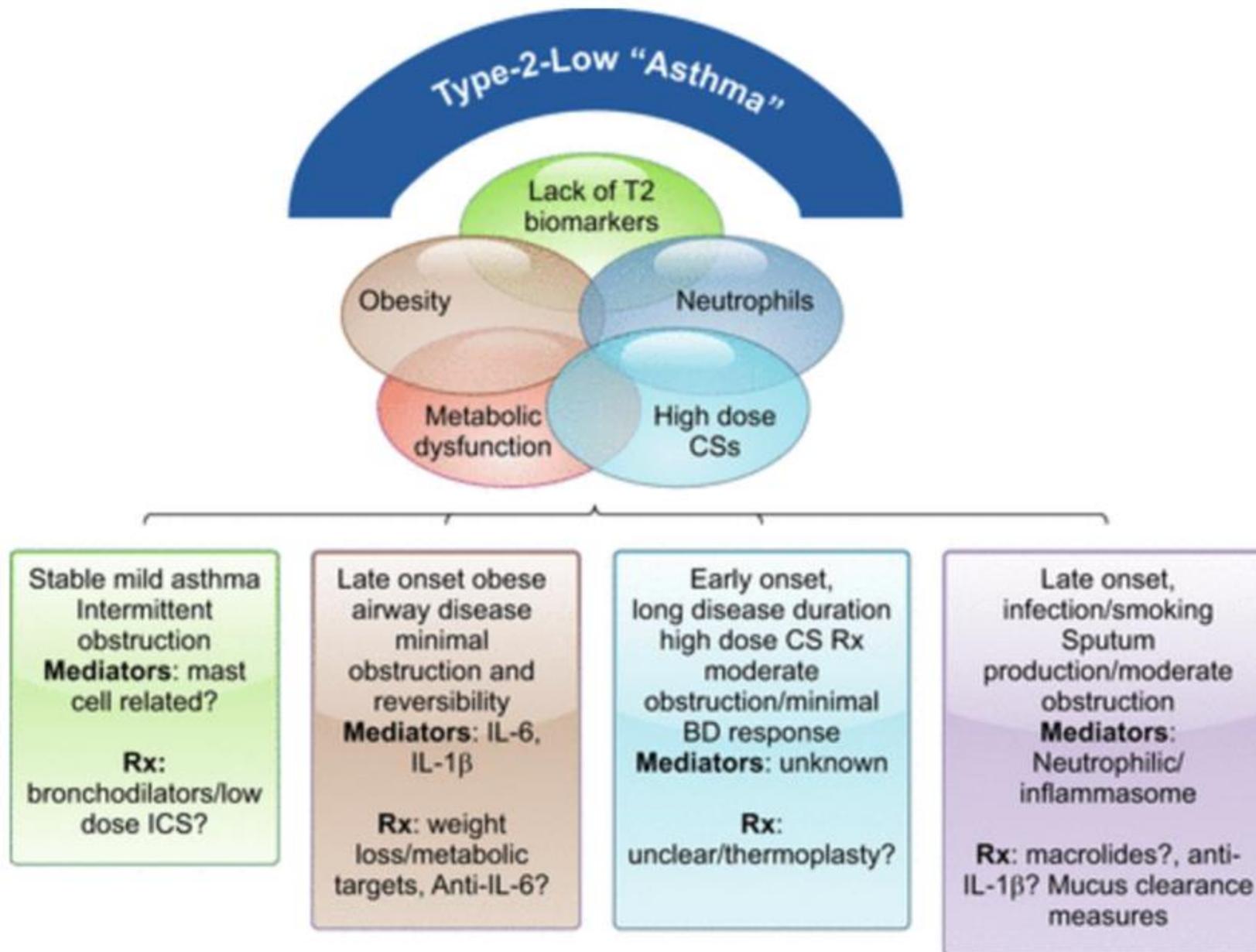
T_H1 inflammation:

- Adult onset
- Smokers
- Lack of allergies

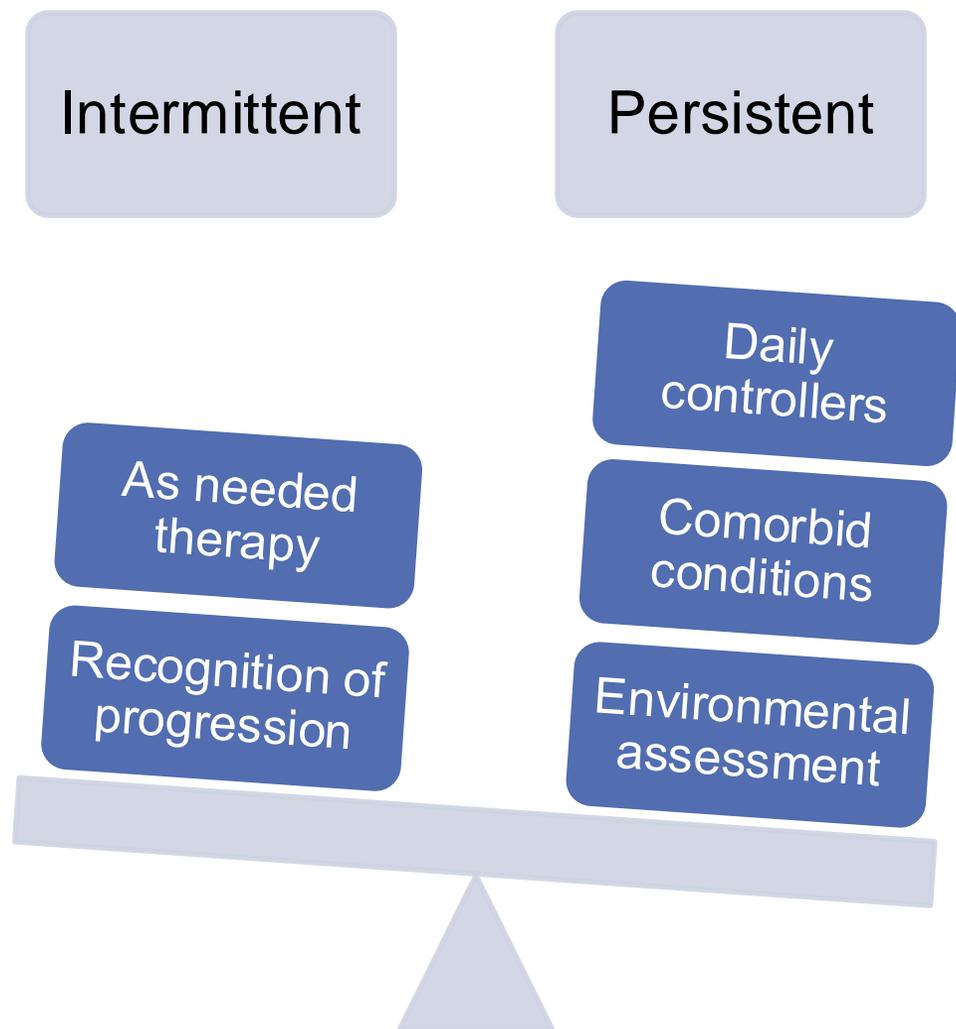
T_H2 inflammation:

- Atopic comorbidities
- Peripheral eosinophilia
- Elevated FeNO





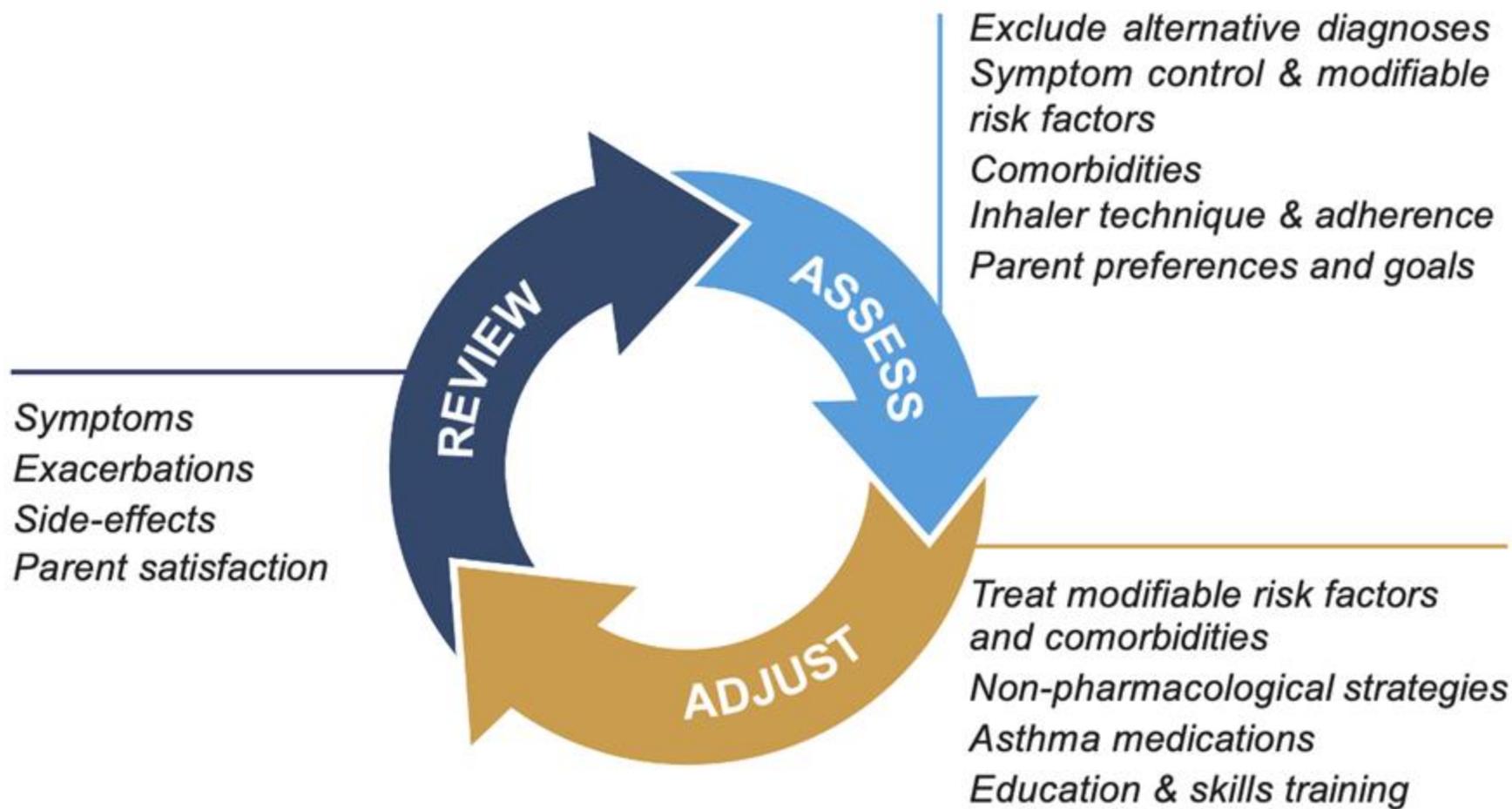
Asthma Management



EVERYONE with asthma requires:

- Education
- Self-management skills
- Inhaler & spacer teaching
- Long term follow up
- Written treatment plans
- Fluid and dynamic treatment plans
- Support

The Never Ending Cycle of Asthma Management



Pearl # 4

- Everyone with asthma should expect to have their management change:
 - Throughout the year
 - Over time

BRACE YOURSELVES

AUTUMN IS COMING





- 12 year old boy with poorly controlled asthma & severe exacerbations
- Told he shouldn't exercise and needs to quit football...which he loves

Goals of Asthma Therapy

- Reduce chronic symptoms
- Prevent exacerbations
- No activity restrictions
- Prevent ER visits/hospitalizations
- Minimize adverse effects of treatment

People with asthma **WILL**
have symptoms

Goal is to minimize
burden

POLL QUESTION

What should be the approach to exercise for individuals with asthma?

- A) Avoid exercise to prevent symptoms.
- B) Exercise is important, and if symptoms occur, the therapy plan should be adjusted.
- C) Only engage in light physical activity to minimize risks.
- D) Use medication to prevent symptoms and continue exercising regularly.



Pearl # 5

- Everyone with asthma should exercise
- If they cannot, their therapy plan needs to change
- B is True “exercise induced asthma” is much less common than poorly controlled asthma that causes symptoms during exercise



Treatment

Relievers

- Work fast
- Treats symptoms
- Always have available

Controllers

- Work long term
- Do not provide immediate relief*

Dry Powder Inhalers



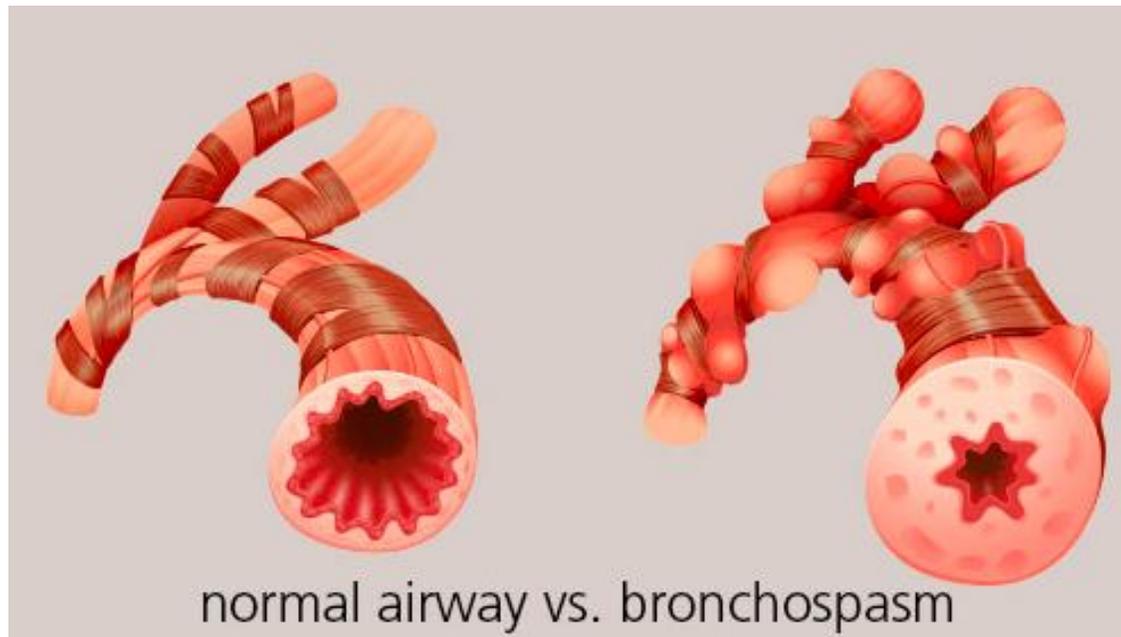
Tips and Tricks

MDI	Dry Powder
Shake before use Need to turn liquid into aerosol	Hold upright Medicine can spill out
Slow, deep inhalation	Fast, forceful inhalation “Suck like a milkshake”
Hold breath for 10 seconds	Hold breath for 10 seconds
Not sure if they received full dose? Give another one	Not sure if they received full dose? Give another one

- 9 year old boy with known asthma has increased cough & shortness of breath at recess
- Pulse ox normal
- No wheezing on exam
- Nurse refused to give albuterol because he took 2 puffs earlier in gym class
- Told to drink some water and walk it off



Acute Asthma Treatment = Dilate!!!



- **Short acting bronchodilators**
- Long acting bronchodilators
- Anti-cholinergics
- Anti-muscarinics

Peal # 6

- Things that do NOT treat acute asthma symptoms:



Before We Go Any Further...

- Albuterol is NOT an “emergency” inhaler
- It is a ‘rescue’ or ‘reliever’ inhaler
 - If you have asthma, you will need albuterol
- When people are taught ‘emergency use only’
 - Removes empowerment for self management
 - Delays administration
 - Rush to the ER

How Many Puffs of Albuterol Are Enough?

- 2007 NHLBI Guidelines
 - *2-6 puffs of SABA every 3-4 hours* for 24-48 hours for home use
- 2018 Global Strategy for Asthma Management and Prevention¹
 - **4-10 puffs of SABA every 20 min for 1 hour**
 - 4-10 puffs of SABA every 3-4 hours with good response

Inhaler (MDI) vs. Nebulizer

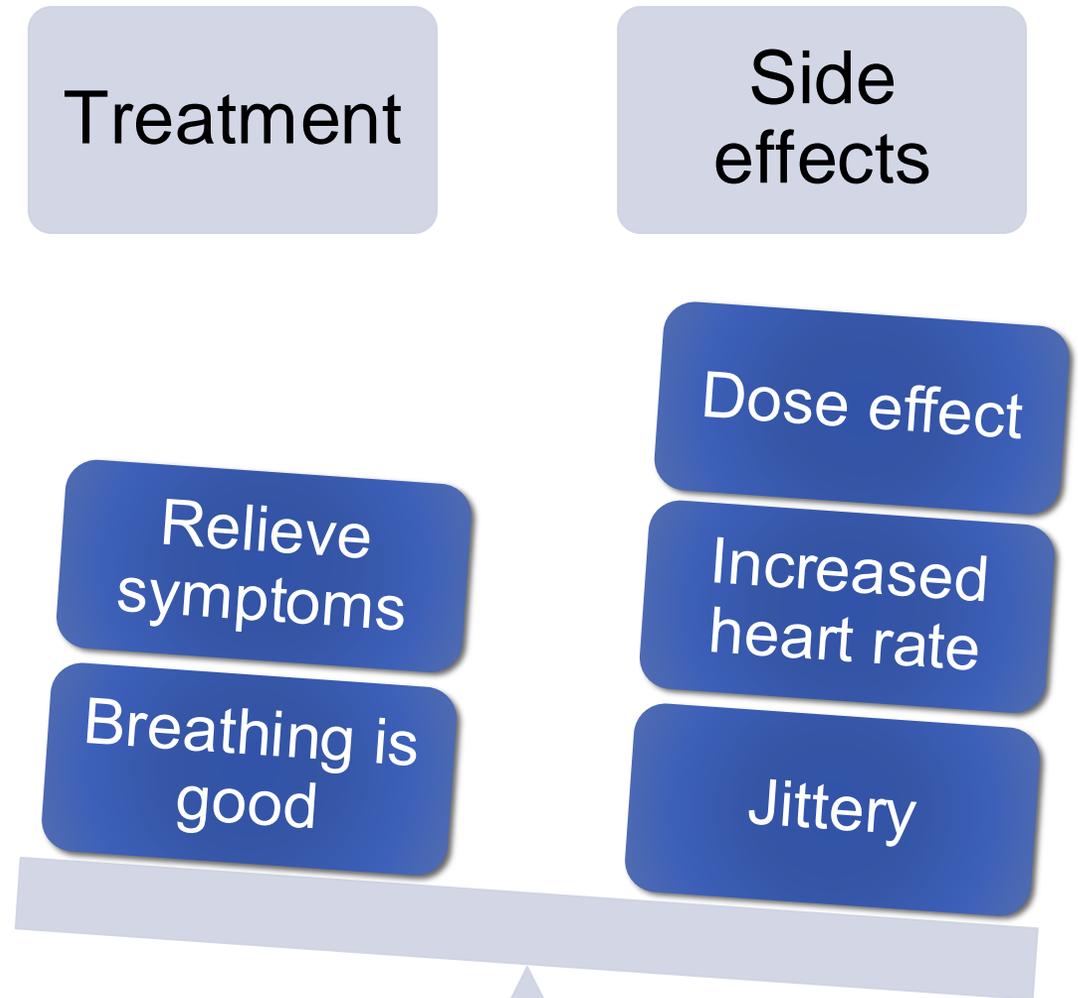
- For mild-to-moderate exacerbation (yellow zone)
- Cochrane Review in 2013
 - 1897 children, 729 adults in 39 trials
- Use of MDI with spacer equivalent to nebulizer
- Nebulizers associated with more side effects

Don't Forget the Spacer!!!



Albuterol is Safe

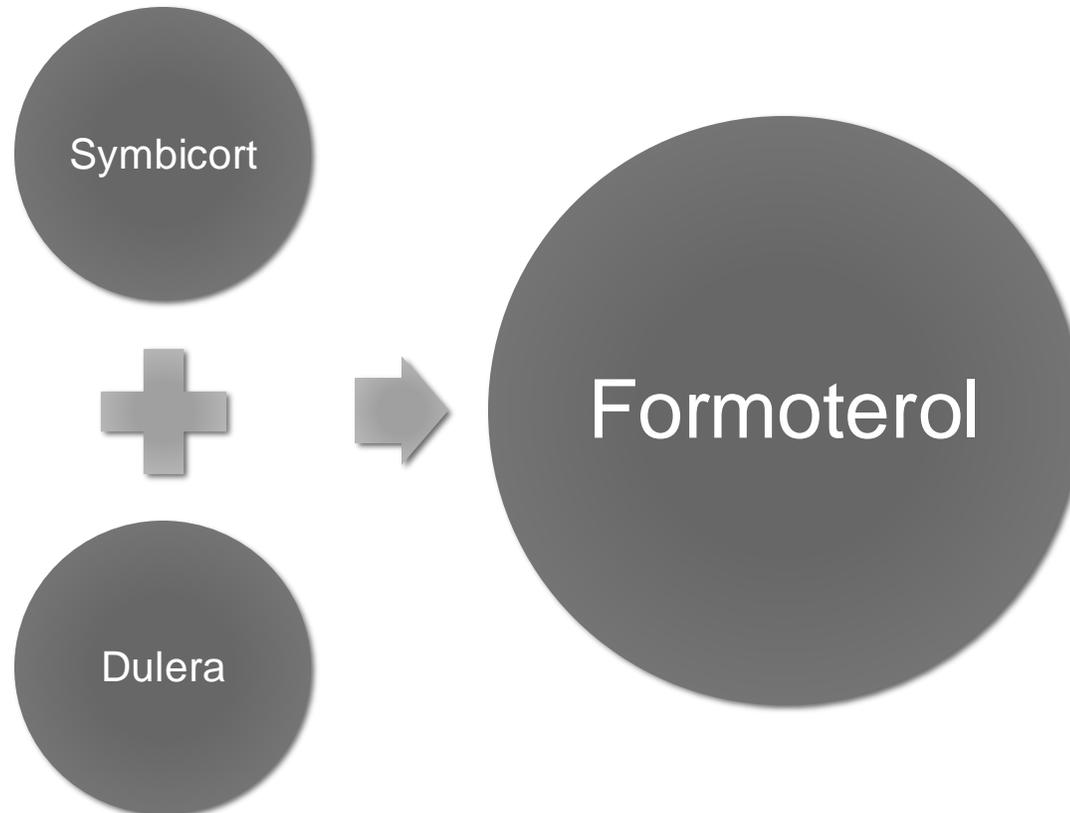
Serious side effects almost entirely associated with high doses given through continuous nebulizer





- 6 year old girl with frequent ER visits
- Has been taking medium dose ICS for 2 years
- PCP increases therapy to high dose ICS and adds montelukast

SMART Therapy





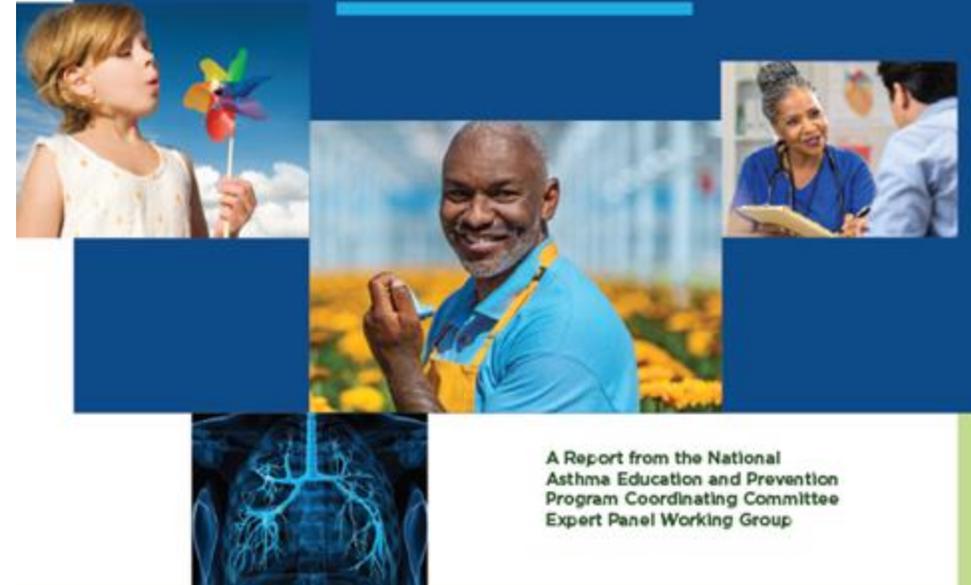
GLOBAL STRATEGY FOR
ASTHMA MANAGEMENT AND PREVENTION

Updated 2022

© 2022 Global Initiative for Asthma

<https://ginasthma.org/gina-reports/>

2020 FOCUSED
UPDATES TO THE
Asthma
Management
Guidelines



U.S. Department of Health and Human Services
National Institutes of Health
National Heart, Lung, and Blood Institute

<https://www.nhlbi.nih.gov/resources/2020-focused-updates-asthma-management-guidelines>

We Can All Be SMART About ICS/LABAs

Recommendation 12: In individuals ages 4 years and older with moderate to severe persistent asthma, the Expert Panel recommends ICS-formoterol in a single inhaler used as both daily controller and reliever therapy compared to either a higher-dose ICS as daily controller therapy and SABA for quick-relief therapy or the same-dose ICS-LABA as daily controller therapy and SABA for quick-relief therapy.

Strong recommendation, high certainty of evidence for ages 12 years and older, moderate certainty of evidence for ages 4-11 years

Recommendation 13: In individuals ages 12 years and older with moderate to severe persistent asthma, the Expert Panel conditionally recommends ICS-formoterol in a single inhaler used as both daily controller and reliever therapy compared to higher-dose ICS-LABA as daily controller therapy and SABA for quick-relief therapy.

Conditional recommendation, high certainty of evidence

Pearls # 7, 8 and 9

Check adherence before increasing therapy



There is ZERO indication to treat anyone with high dose ICS monotherapy



Montelukast is not a primary treatment for asthma or allergic rhinitis...and it has a black box warning that must be discussed with every family

We Live in the Age of Biologics

Choose the right target

- **Phenotyping**
- Biomarkers

Choose the right patient

- Disease severity
- Adherence

Choose the right path

- Shared decision making
- Revisit after starting

Moderate to Severe Persistent Asthma

≥ 12 yrs old

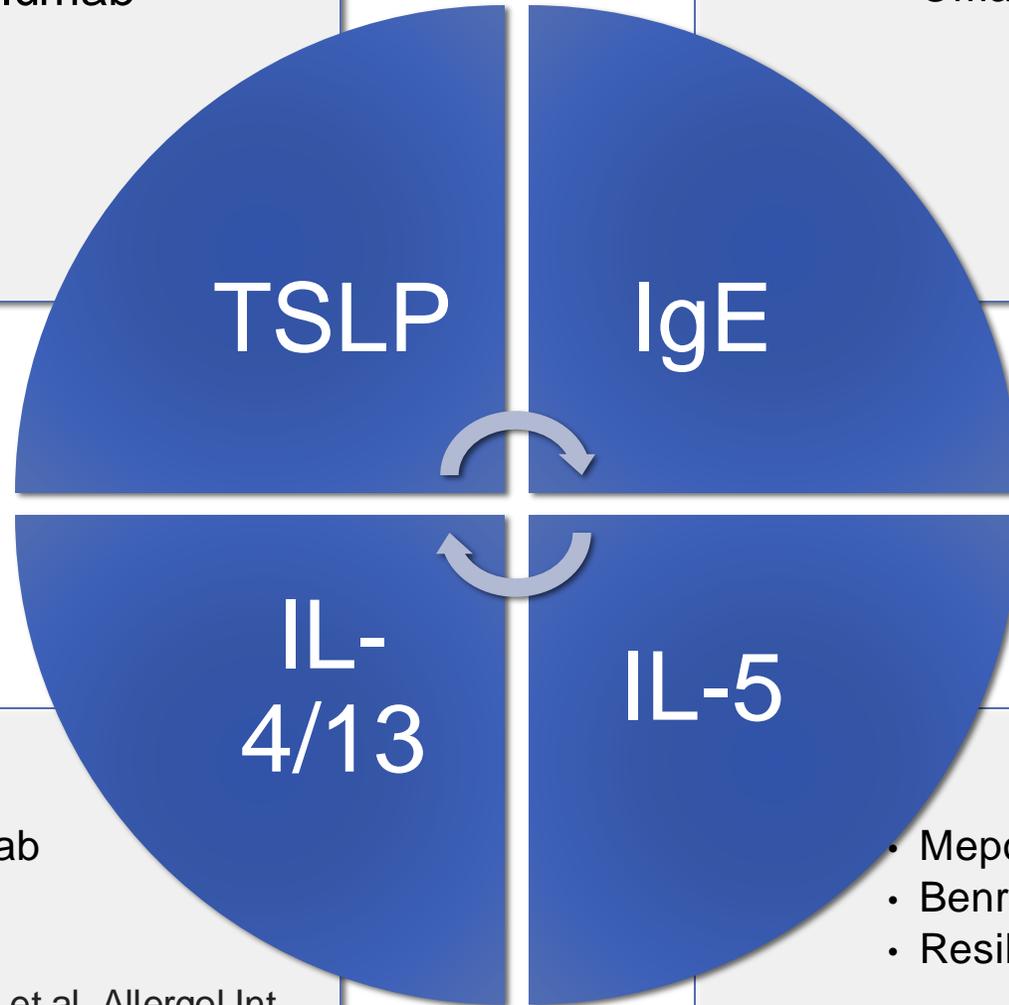
No biomarkers

• Tezepelumab

• Omalizumab

≥ 6 years old

+ IgE to any perennial aeroallergen



≥ 6 yrs old

“eosinophilic” phenotype

• Dupilumab

Nagase H, et al. Allergol Int. 2023 Jan;72(1):11-23.

• Mepolizumab*
• Benralizumab**
• Reslizumab***

≥ 6 yrs old*
≥ 12 yrs old**
≥ 18 yrs old***
“eosinophilic” phenotype
≥ 150 eos cells/mL**



**4 year old girl
recently diagnosed
with allergic asthma**

**Family is told to get
rid of their dog**

Allergies and Asthma

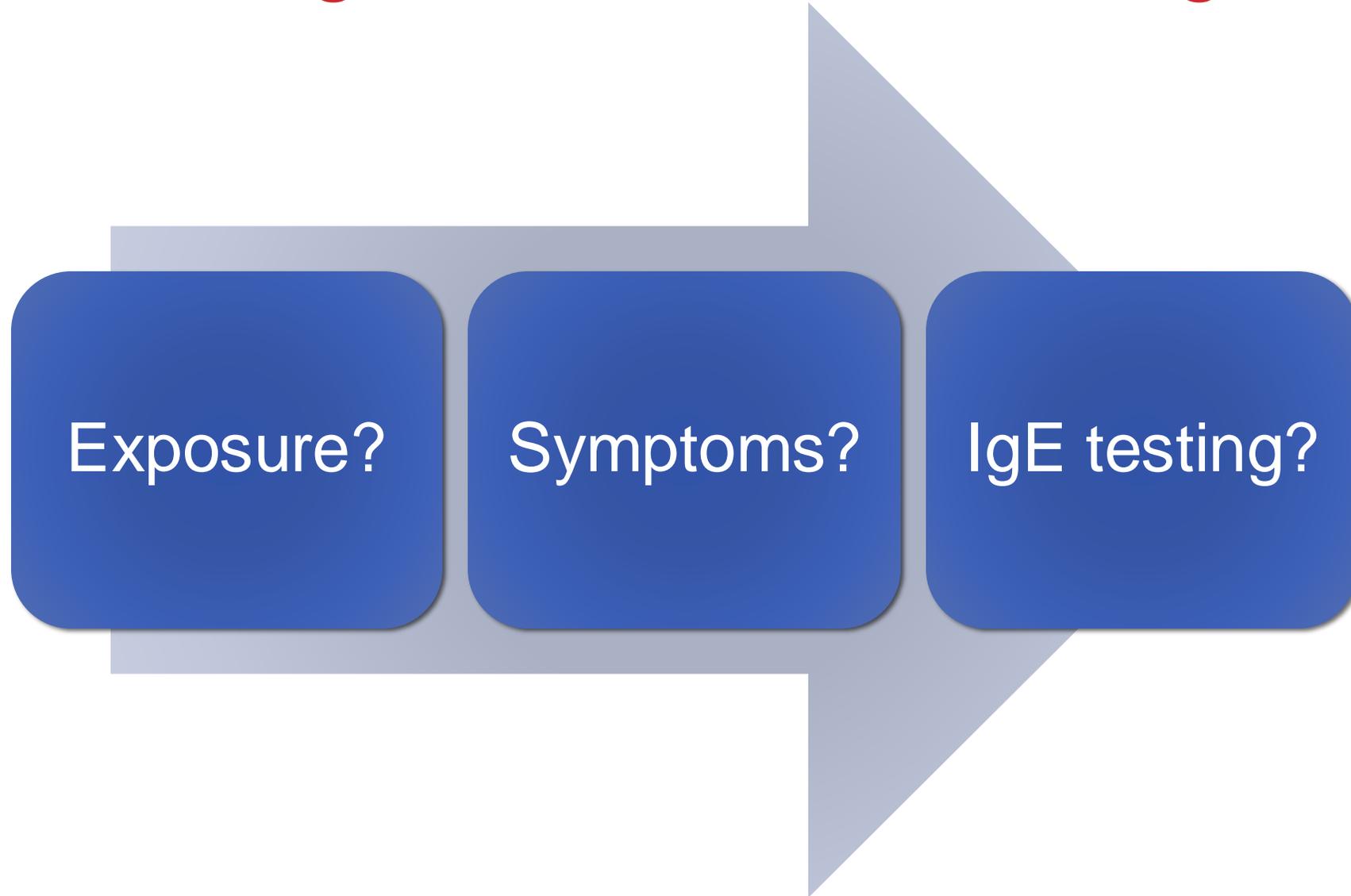
Chronic

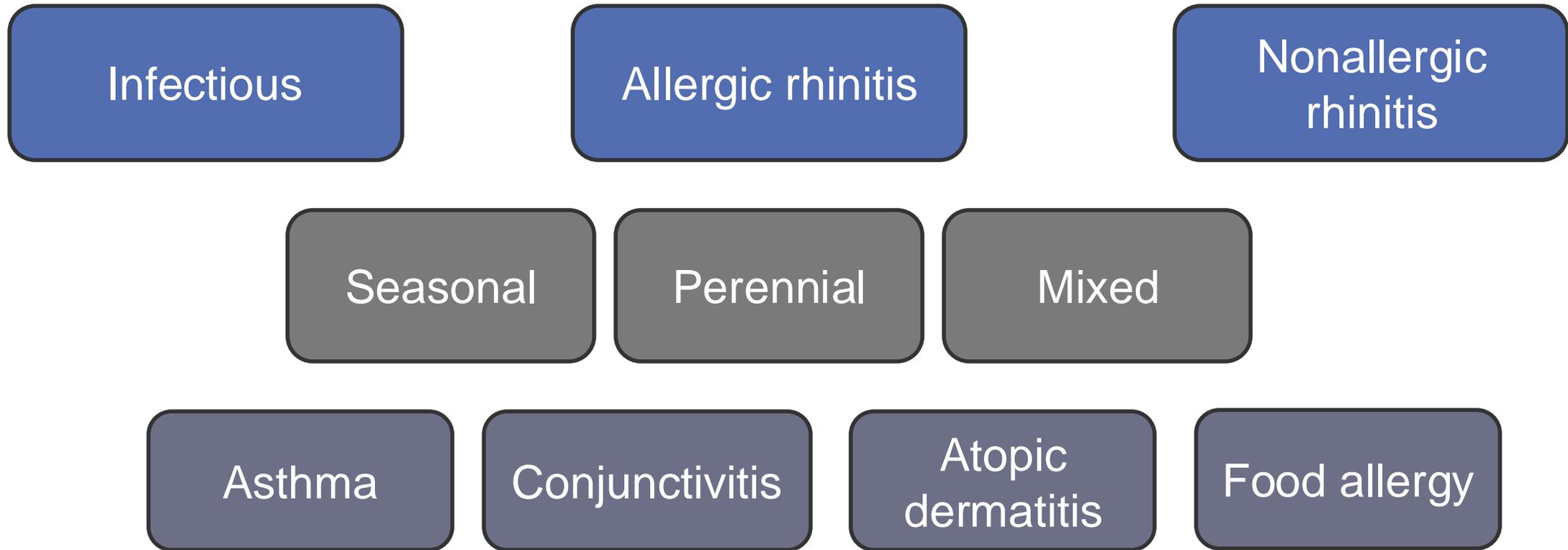
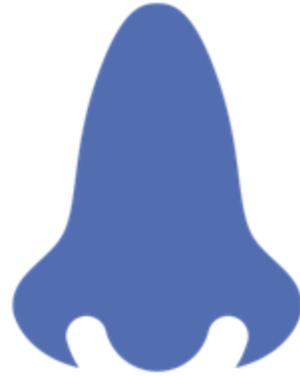


Acute



Clarify the Diagnosis Before Advising Intervention





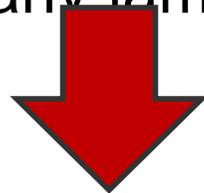
Pearls # 10, 11, and 12

All of the symptoms that occur from allergic rhinitis can occur from nonallergic causes; clarification of the diagnosis is imperative



Oral antihistamines do not treat nasal congestion or postnasal drip

Please don't tell any family to get rid of Fido

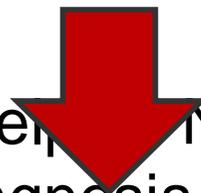


Pearls # 13, 14, and 15

IgE testing identifies sensitization to aeroallergens



If negative, no indication to treat with antihistamines or adopt allergen avoidance measures



Clinical and therapeutic trial also helpful. No improvement with antihistamines?
Reconsider diagnosis or pursue testing

Mitigation Strategies

- ✓ What is the diagnosis?
- ✓ Are they actually exposed to this allergen?
- ✓ There is no single measure that will help
- ✓ Multifactorial strategies based upon the allergens:
 - ✓ Dust mite covers, washing in hot water, removal of stuffies from the bed, no humidifiers
 - ✓ Windows closed at all times, change clothing, bathe before bed
 - ✓ Pets out of bedroom, HEPA vacuum several times/week

The Best Air Purifier

Updated December 19, 2023



Intervention assessed in studies in the SR	EtD table number	Evidence on use as a single-component strategy for allergen mitigation (certainty of evidence)	Evidence on use as part of a multicomponent strategy for allergen mitigation (certainty of evidence)*
Air filtration systems and air purifiers	VIII	Intervention makes no difference (low certainty of evidence)	Intervention makes no difference (moderate certainty of evidence)

<https://www.nhlbi.nih.gov/resources/2020-focused-updates-asthma-management-guidelines>

<https://www.nytimes.com/wirecutter/reviews/best-air-purifier/>

SECTION VI

The Role of Subcutaneous & Sublingual Immunotherapy in the Treatment of Allergic Asthma



Pearls # 16, 17, and 18

Clinician's Summary:

The Expert Panel conditionally recommends SCIT as an adjunctive treatment for individuals who have demonstrated allergic sensitization and evidence of worsening asthma symptoms after exposure to the relevant antigen or antigens either acutely (e.g., allergy to pets) or on a seasonal basis (e.g., allergy to grass or ragweed) or a chronic basis (e.g., allergy to dust mites). Individuals who place a high value on possible small improvements in quality of life, symptom control, and a reduction in long-term and/or quick-relief medication use and a lower value on the risk of systemic reactions of wide-ranging severity might consider SCIT as adjunct therapy.

1. Allergy shots are a LONG term, not acute treatment option
2. MUST identify the optimal candidate based upon history and testing
3. Asthma must be well controlled in order to receive allergy shots

What About SLIT?

Clinician's Summary:

The evidence that the Expert Panel reviewed did not support the use of SLIT specifically for the treatment of allergic asthma. However, the FDA has approved SLIT tablets (but not aqueous preparations) for the treatment of allergic rhinoconjunctivitis. Individuals with this condition who also have asthma might benefit from SLIT and, if so, this benefit is most likely to be in the form of a reduction in the use of quick-relief and/or long-term control medications.

FDA approved:
Ragweed
Grass pollen
Dust mites

Non-FDA approved:
Liquid drops prepared by various
professionals or direct to
consumer products

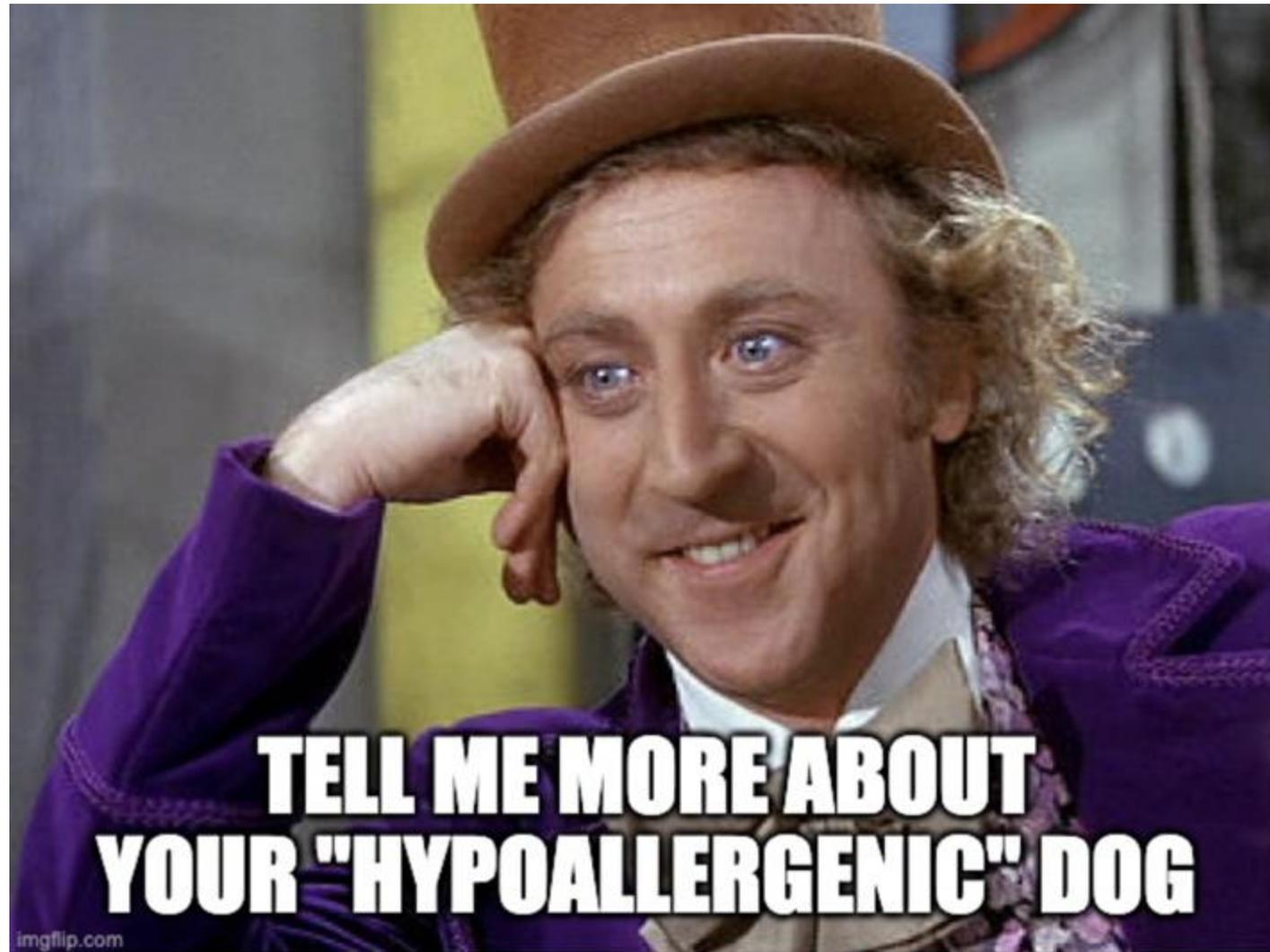
Top Takeaways

There are MANY outdated approaches that negatively impact people living with asthma

Clarify the diagnosis of allergy before going deep down the rabbit hole

We have SO many options available to help our patients – do not settle for anything less than control!

Four More Asthma Myths



A young Black man in a military uniform, including a camouflage cap and jacket, is smiling broadly. He is positioned on the left side of the frame against a dark, textured background. The text is overlaid on the right side of the image.

If someone is diagnosed
with asthma...even as a
child...

They can **never**
serve in the military

Review

Military accession guidelines

An allergy focus

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James Quinn, MD^{*}

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[†] Department of Allergy-Immunology, Joint Base Elmendorf-Richardson Hospital, Joint Base Elmendorf-Richardson, Anchorage, Alaska

[‡] Department of Allergy-Immunology, 48th Medical Group, Royal Air Force Lakenheath, Suffolk, England

Milk, mucus and myths

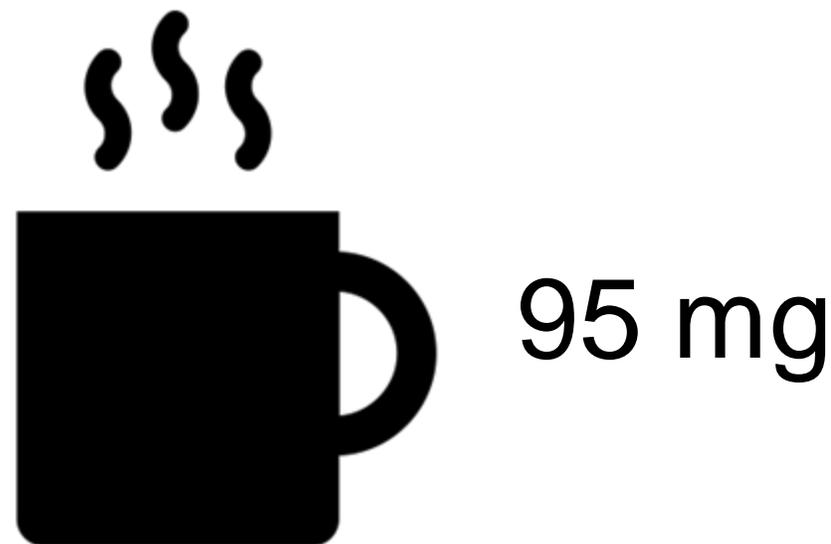
Ian M Balfour-Lynn

CONCLUSIONS

While certainly the texture of milk can make some people feel their mucus and saliva is thicker and harder to swallow, there is no evidence (and indeed evidence to the contrary) that milk leads to excessive mucus secretion. Milk is an important source of calories, calcium and vitamins for children. The milk–mucus myth needs to be rebutted firmly by healthcare workers.

Caffeine Treats Asthma?

- Meta analysis: 6 trials □ 55 people
- 5-12% improvement in FEV₁ for up to 2 hours
- 5 mg/kg body weight



Equivalent ~4 cups of coffee

Thank
you