بسم الله الرحمن الرحیم

Asthma In Children

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Global

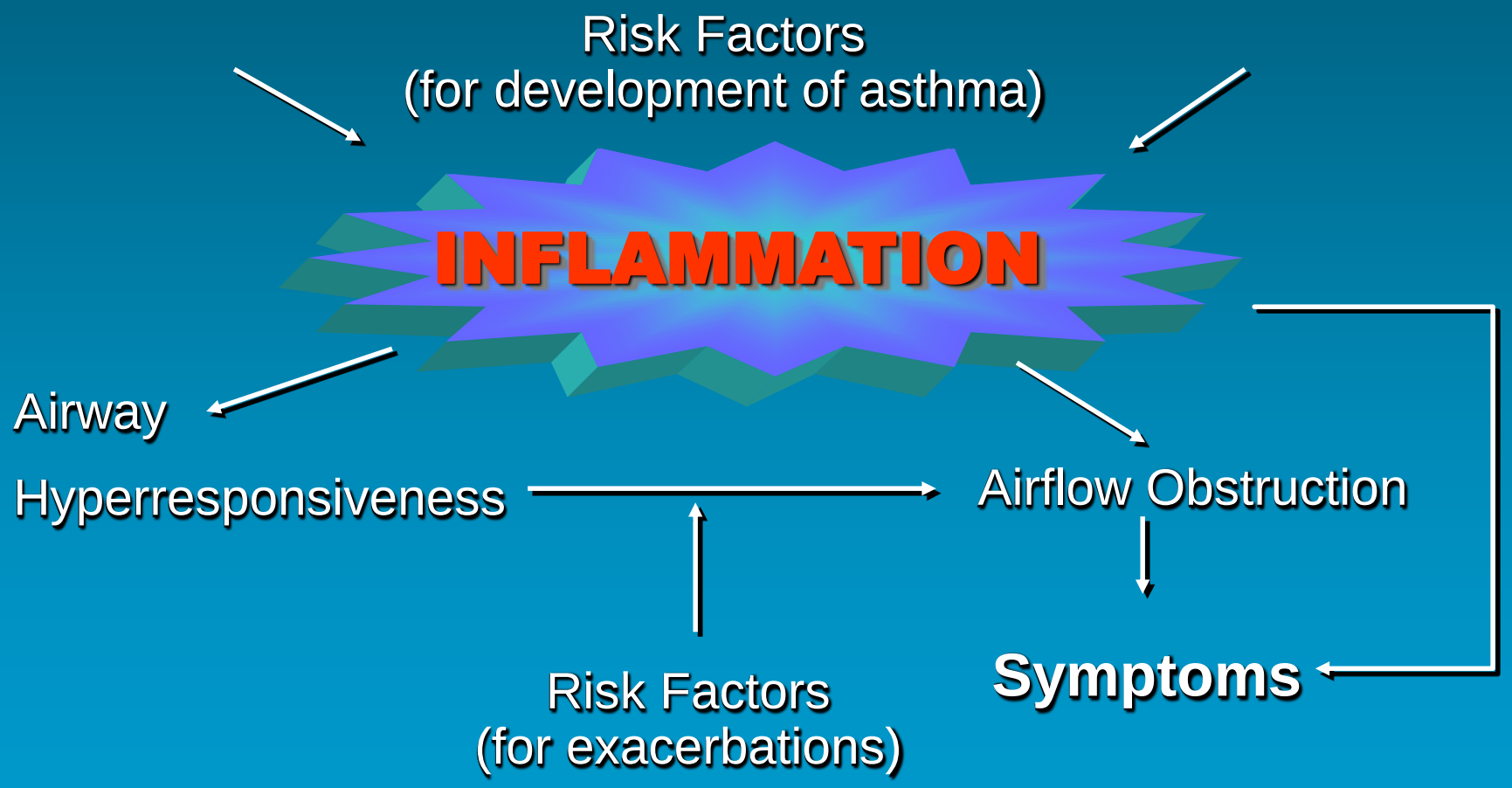
INitiative for

Asthma

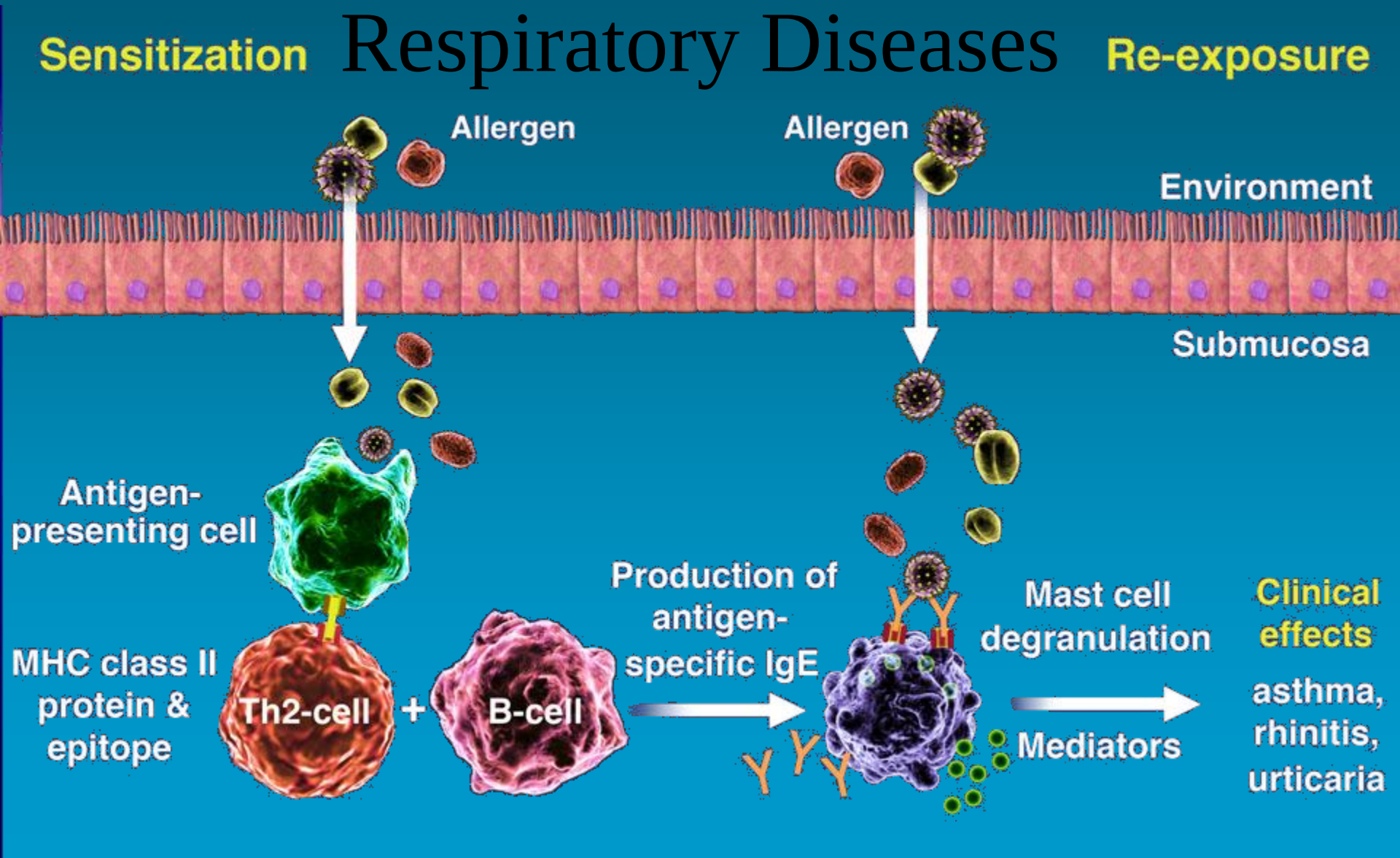
Definition of Asthma

- A chronic inflammatory disorder of the airways
- Many cells and cellular elements play a role
- Chronic inflammation leads to an increase in airway hyperresponsiveness with recurrent episodes of wheezing, coughing, and shortness of breath
- Widespread, variable, and often reversible airflow limitation

Mechanisms Underlying the Definition of Asthma



Immunological Mechanisms in Respiratory Diseases



Burden of Asthma

- Asthma is one of the most common chronic diseases worldwide
- Prevalence increasing in many countries, especially in children
- A major cause of school/work absence
- An overall increase in severity of asthma increases the pool of patients at risk for death

Factors that Exacerbate Asthma

- Allergens
- Air Pollutants
- Respiratory infections
- Exercise and hyperventilation
- Weather changes
- Sulfur dioxide
- Food, additives, drugs

Risk Factors that Lead to Asthma Development

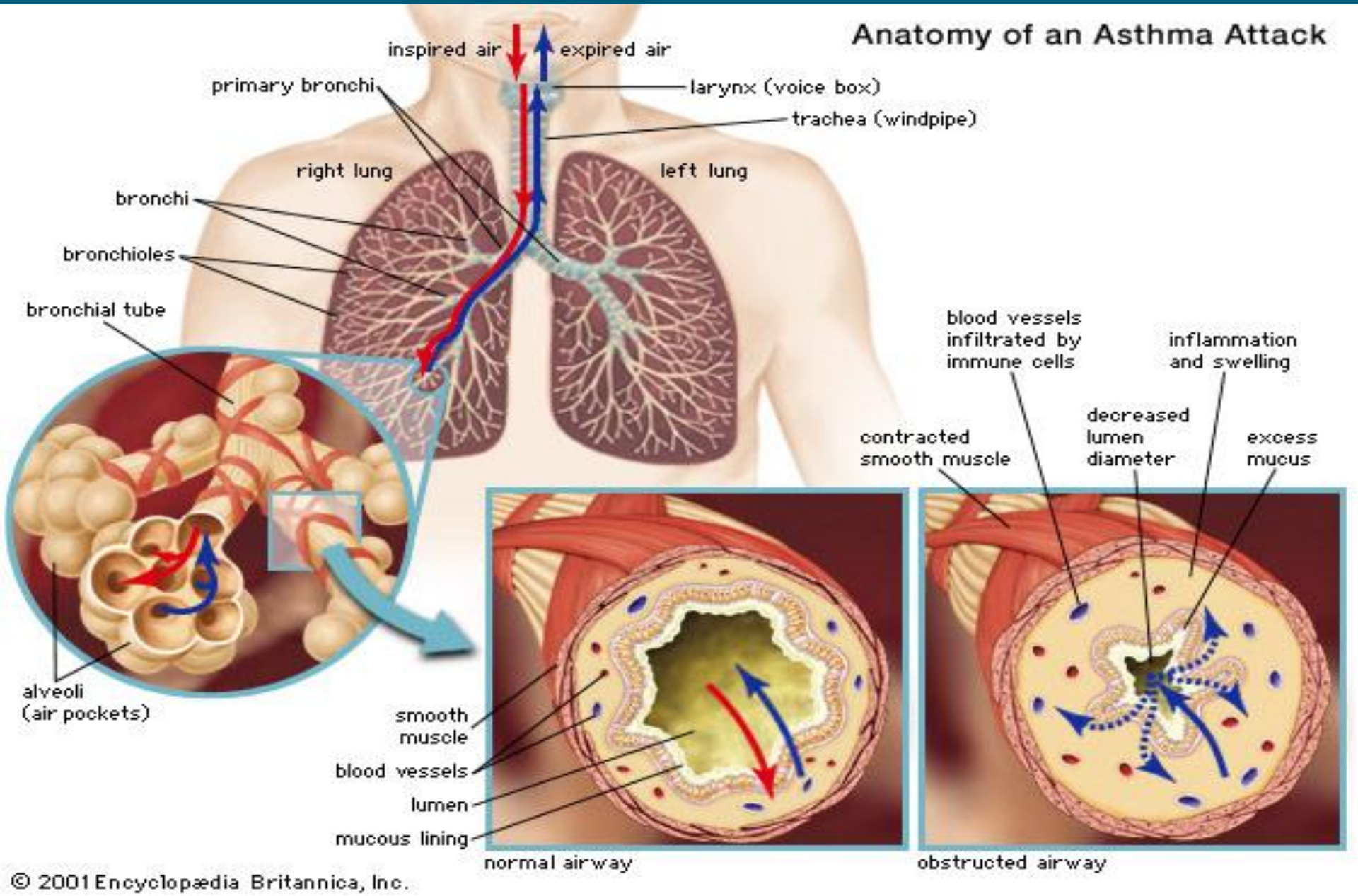
Host Factors

- Genetic predisposition
- Atopy
- Airway hyper-responsiveness
- Gender
- Race/Ethnicity

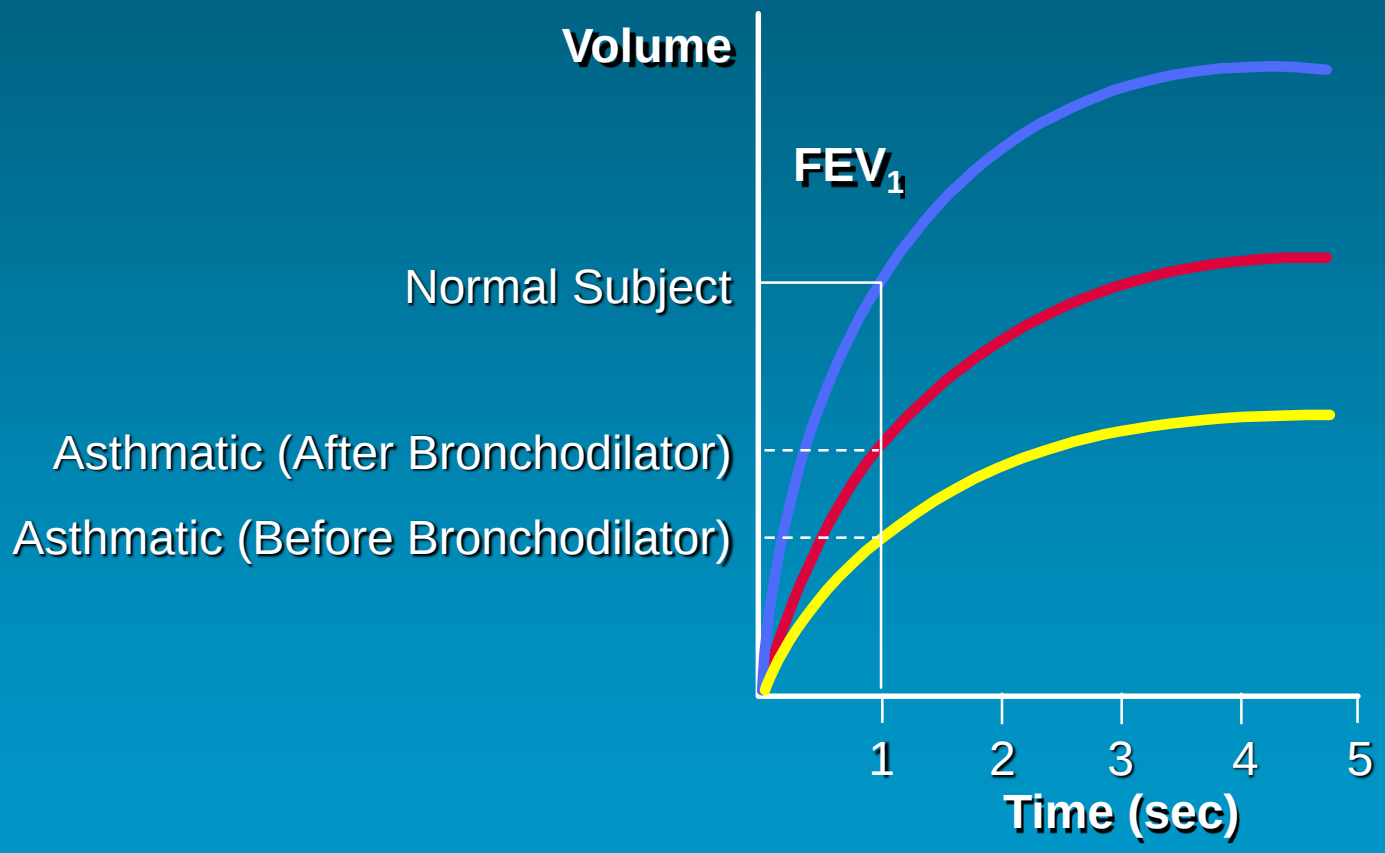
Environmental Factors

- Indoor allergens
- Outdoor allergens
- Occupational sensitizers
- Tobacco smoke
- Air Pollution
- Respiratory Infections
- Parasitic infections
- Socioeconomic factors
- Family size
- Diet and drugs
- Obesity

What Is Asthma ?



Typical Spirometric (FEV_1) Tracings



Note: Each FEV_1 curve represents the highest of three repeat measurements

Part 3: Avoid Exposure to Risk Factors

- Reduce exposure to indoor allergens
- Avoid tobacco smoke
- Identify irritants in the workplace
- Explore role of infections on asthma development, especially in children and young infants

Pharmacologic Therapy

Controller Medications:

- Inhaled glucocorticosteroids
- Systemic glucocorticosteroids
- Cromones
- Methylxanthines
- Long-acting inhaled β_2-agonists
- Long-acting oral β_2-agonists
- Leukotriene modifiers
- Anti-IgE

Pharmacologic Therapy

Reliever Medications:

- Rapid-acting inhaled β_2-agonists
- Systemic glucocorticosteroids
- Anticholinergics
- Methylxanthines
- Short-acting oral β_2-agonists

Recommended Asthma Medications Step 1: Children Younger Than 5yrs

Severity	Daily Controller Medications	Other Options *(in order of cost)*
Step 1: Intermittent	• None	• None

Reliever Medication: Rapid-acting inhaled β_2- agonist prn, not more than 3-4 times a day. Once control is achieved and maintained for at least 3 months, gradual reduction of therapy should be tried.

Recommended Asthma Medications Step 2: Children Younger Than 5 yrs

Severity	Daily Controller Medications	Other Options *(in order of cost)*
Step 2: Mild Persistent	• Low-dose inhaled glucocorticosteroid	• Sustained-release theophylline, *or* • Cromone, *or* • Leukotriene modifier

Reliever Medication: Rapid-acting inhaled β_2- agonist prn, not more than 3-4 times a day. Once control is achieved and maintained for at least 3 months, gradual reduction of therapy should be tried.

Recommended Asthma Medications Step 3: Children Younger Than 5yrs

Severity	Daily Controller Medications	Other Options (in order of cost)
Step 3: Moderate persistent	• Medium-dose inhaled glucocorticosteroid	• Medium-dose inhaled glucocorticosteroid *plus* sustained-release theophylline, *or* • Medium-dose inhaled glucocorticosteroid *plus* long-acting inhaled β_2- agonist, *or* • High-dose inhaled glucocorticosteroid, *or* • Medium-dose Inhaled glucocorticosteroid *plus* leukotriene modifier

Reliever Medication: Rapid-acting inhaled β_2- agonist prn, not more than 3-4 times a day. Once control is achieved and maintained for at least 3 months, gradual reduction of therapy should be tried.

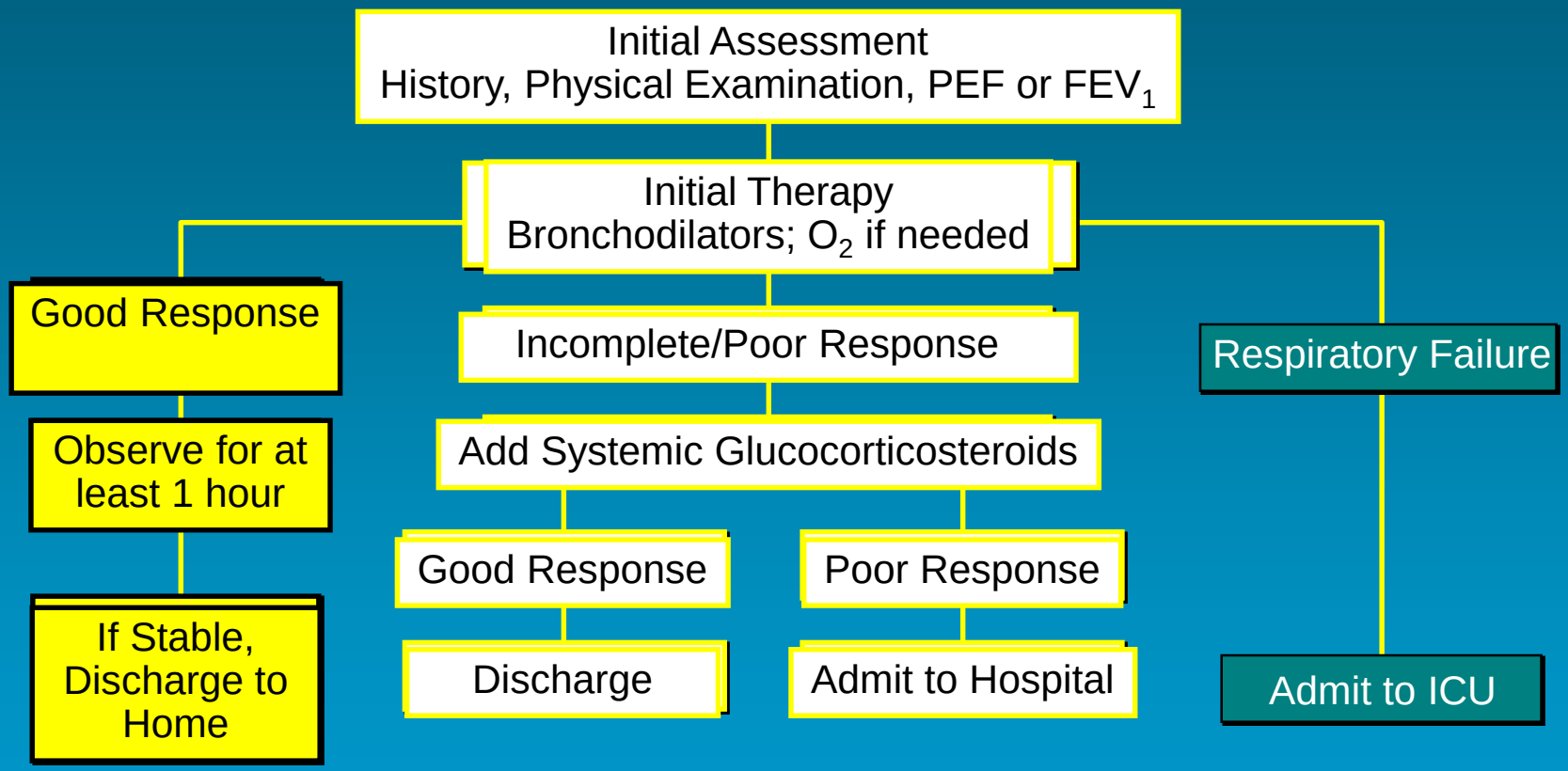
Recommended Asthma Medications Step 4: Children Younger Than 5yrs

Severity	Daily Controller Medications	Other Options
Step 4 Severe persistent	• High-dose inhaled glucocorticosteroid *plus* one or more of the following, if needed: - Sustained-release theophylline - Leukotriene modifier - Long-acting inhaled β_2- agonist - Oral glucocorticosteroid	

Reliever Medication: Rapid-acting inhaled β_2- agonist prn, not more than 3-4 times a day. Once control is achieved and maintained for at least 3 months, gradual reduction of therapy should be tried.

Emergency Department Management

Acute Asthma



معیارهای ابتلا به آسم در بررسی اولیه

۱) اذعان بیمار مبنی بر تشخیص آسم توسط پزشک

۲) سابقه مصرف سالبوتامول استنشاقی در یک سال گذشته

۳) سابقه بستری در بیمارستان به علت آسم

۴) سابقه خس خس تکرار شونده (همراه با سرماخوردگی ، ورزش و یا در حالت عادی)در یک سال گذشته

Optional Therapy Slides

MDI's

Airomir MC
Ventolin®
Atrovent®
*
Becloforte®
*
Beclovent®
Berotec®
Combivent®
Flovent®
Tilade®
Serevent®
Intal®
Vanceril®
QVAR®
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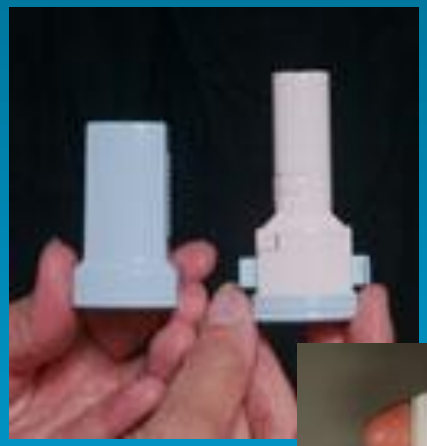
DPI's

- Technique is everything
  - Teach, demonstrate, review!!!
  - Review proper cleaning as well



Spacers/Holding Chambers

Patient Teaching Related to Drug Therapy

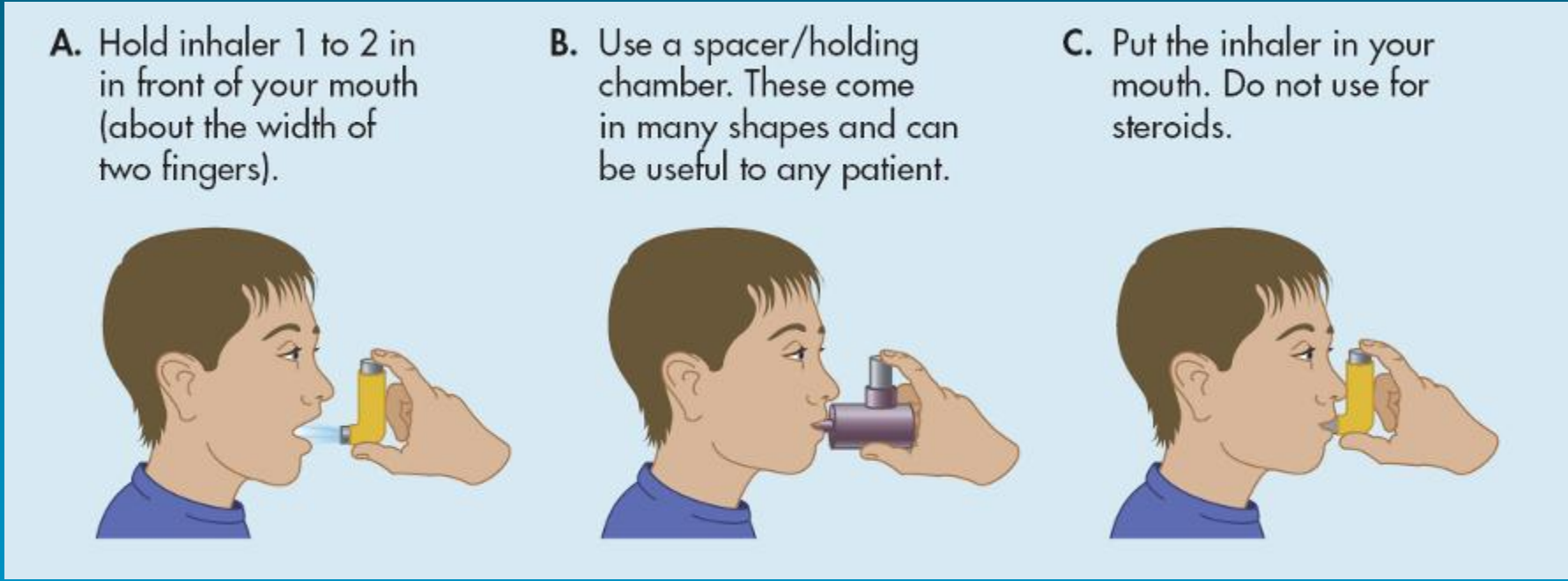
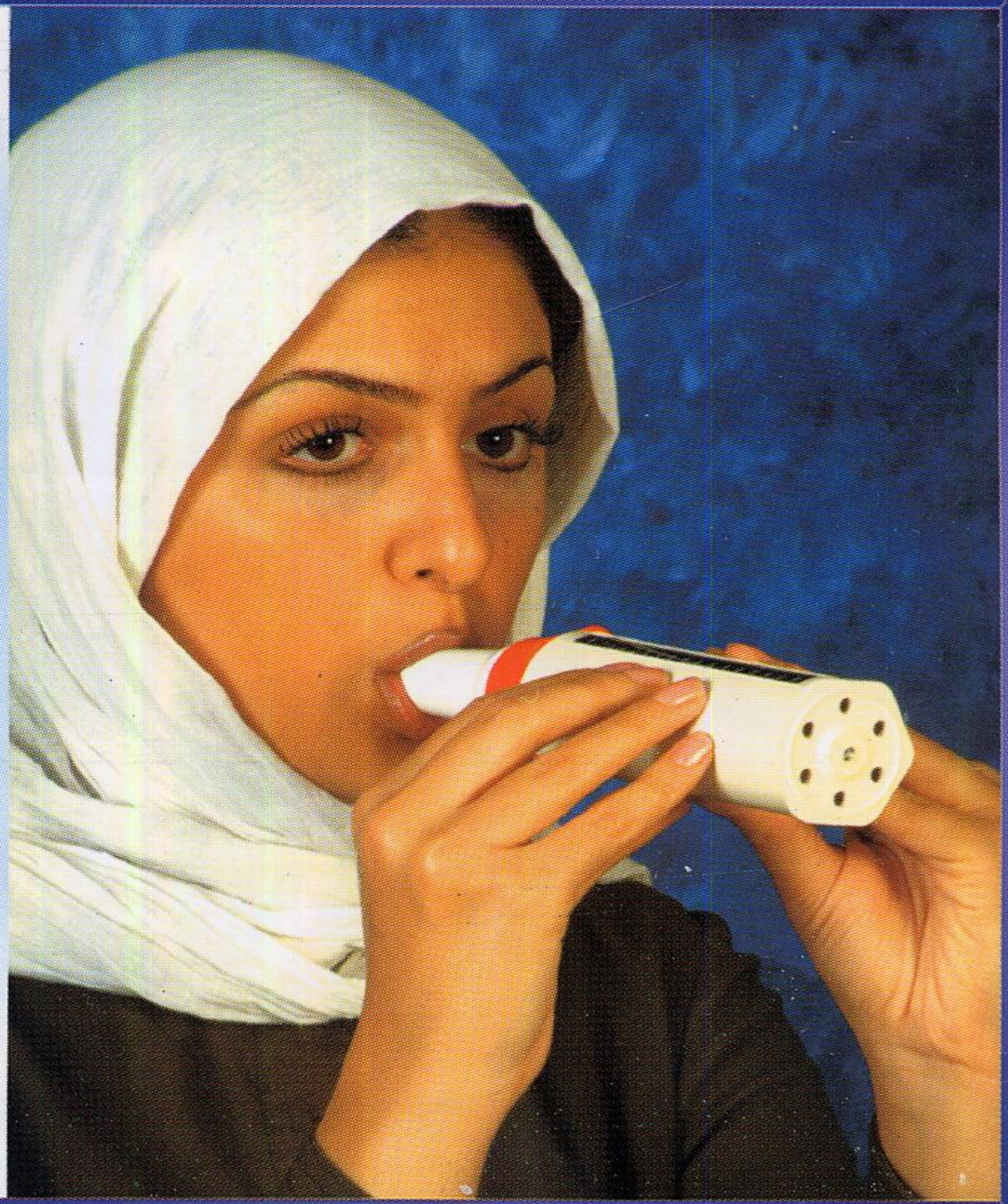


Figure 29-5
Modified



Peak Flow Meters