

Chronic cough \rightarrow > 8 weeks in adult
 \rightarrow > 4 weeks in children

most common causes of chronic cough in Adult:- slide 7

- 1) upper airway cough syndrome (post nasal drip)
- 2) b. Asthma
- 3) GERD

PE:- (General appearance)

- 1) Audible wheeze
- 2) cyanosis
- 3) clubbing
- 4) blue bloater / pink puffer

(Throat): 1) cobblestone appearance 2) PND paroxysmal nocturnal dyspnea

Nose: Pale mucosa - Neck: LN, JVP \rightarrow jugular venous pulse

HF \rightarrow سعال في الليل

chest: 1) air entry 2) wheeze 3) crepitation

Case

* dry cough & shortness of breath & wheeze & timing of cough (night) & presence of history of eczema \Rightarrow b. asthma سعال في الليل

(spirometry) pulmonary function test سعال في الليل

- lung volume سعال في الليل
في ب. asthma سعال في الليل
very narrow velocity of air exit سعال في الليل
- 1) FVC (force vital capacity) \rightarrow سعال في الليل
 - 2) FEV1 (force expiratory volume in 1st sec)
 - 3) 2/1 سعال في الليل

obstructive lung dz \leftarrow less than 0.75 سعال في الليل
(b. asthma)

* Flow Volume loop

obstructive lung dz since \dot{V} is reduced -
"Flow rate reduced rather than lung volume"

RV: force expiration so lung bk for \dot{V} volume \dot{V}

* look at pics in next page *

* how to differentiate if this obstructive lung dz, reversible, intermittent or irreversible??

if the Pt have b. asthma or chronic bronchitis?

bronchodilator reversibility testing

we have to give the Pt bronch dilator & repeat the pulmonary function test every 10-15 min

FEV1 improved by 18% \approx 200ml \rightarrow reversible or intermittent air flow limitation \Rightarrow dx b. asthma

* look at pic in next page *

* What is the pathophysiology of b. asthma??

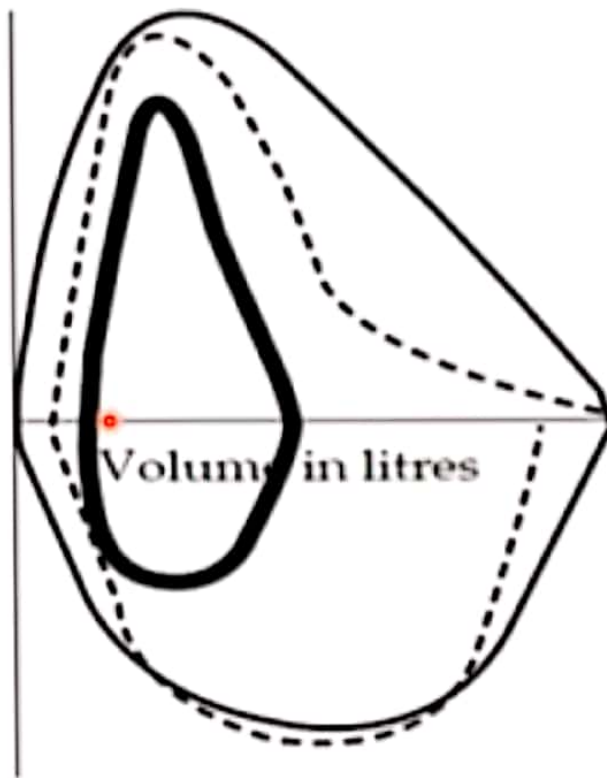
- 1] chronic inflammation
- 2] Airway hyperresponsiveness
- 3] Intermittent airway obstruction

PEF (Peak expiratory flow meter)

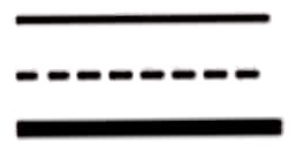
more than $\begin{cases} < 10\% \text{ in adult} \\ < 13\% \text{ in children} \end{cases}$

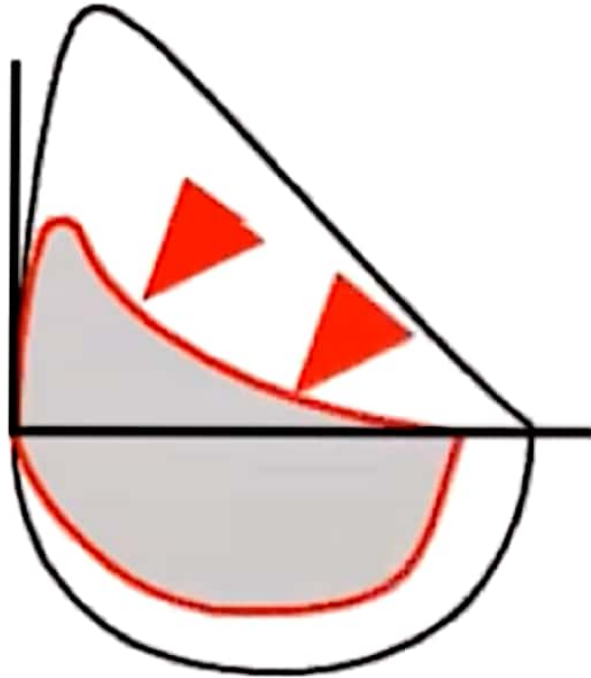
avg \approx 2 week is \rightarrow intermittent air flow limitation
 \rightarrow b. asthma

Flow rates
L / sec

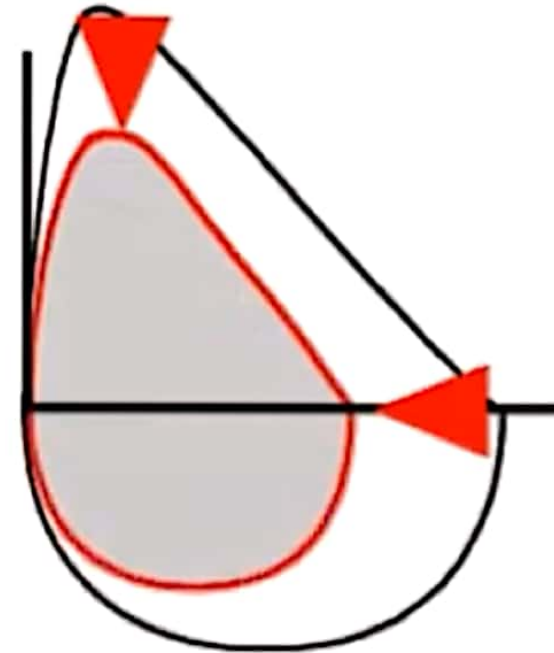


Normal
Obstructive abnormality
Restrictive abnormality



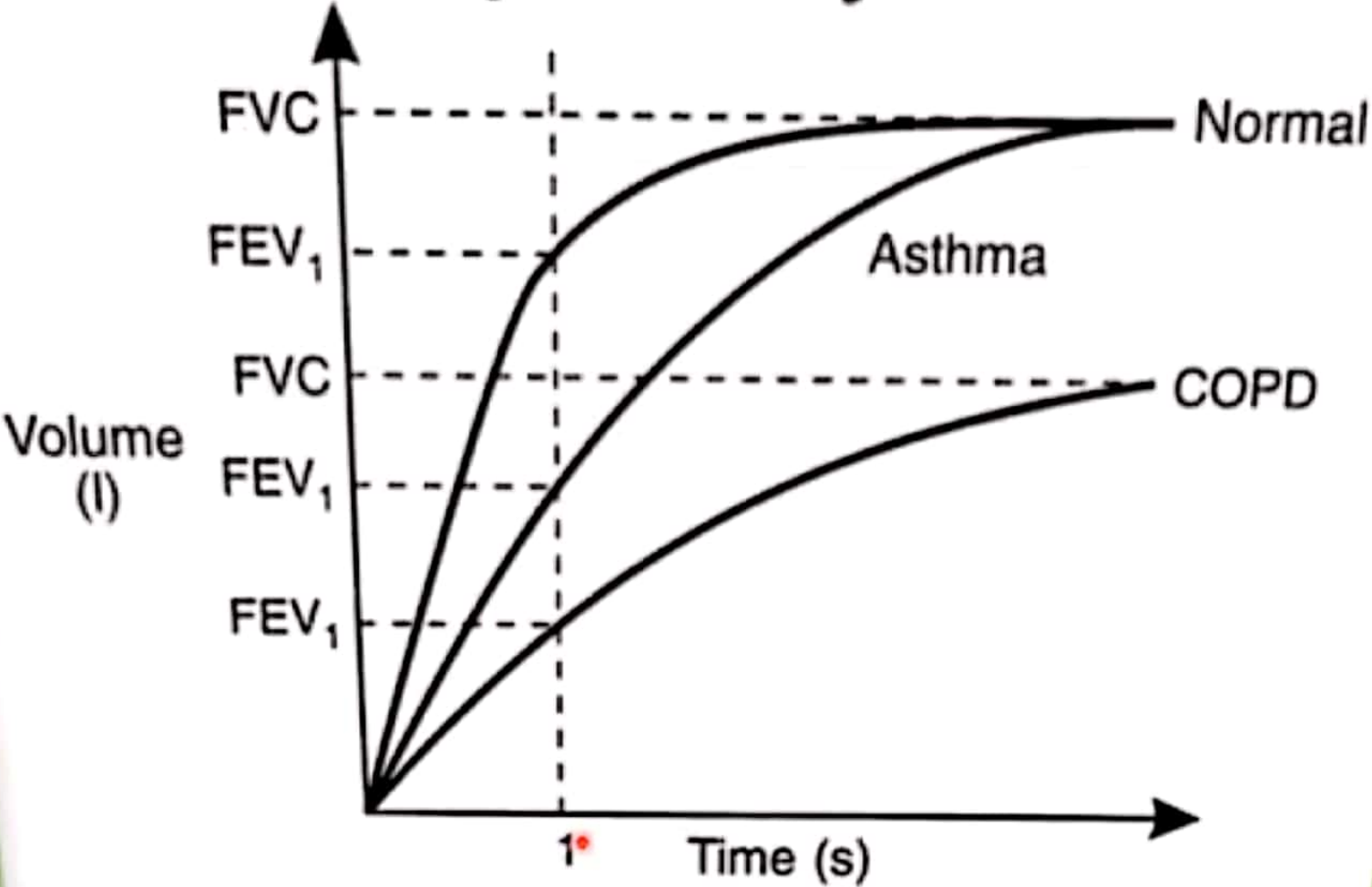


Obstruction

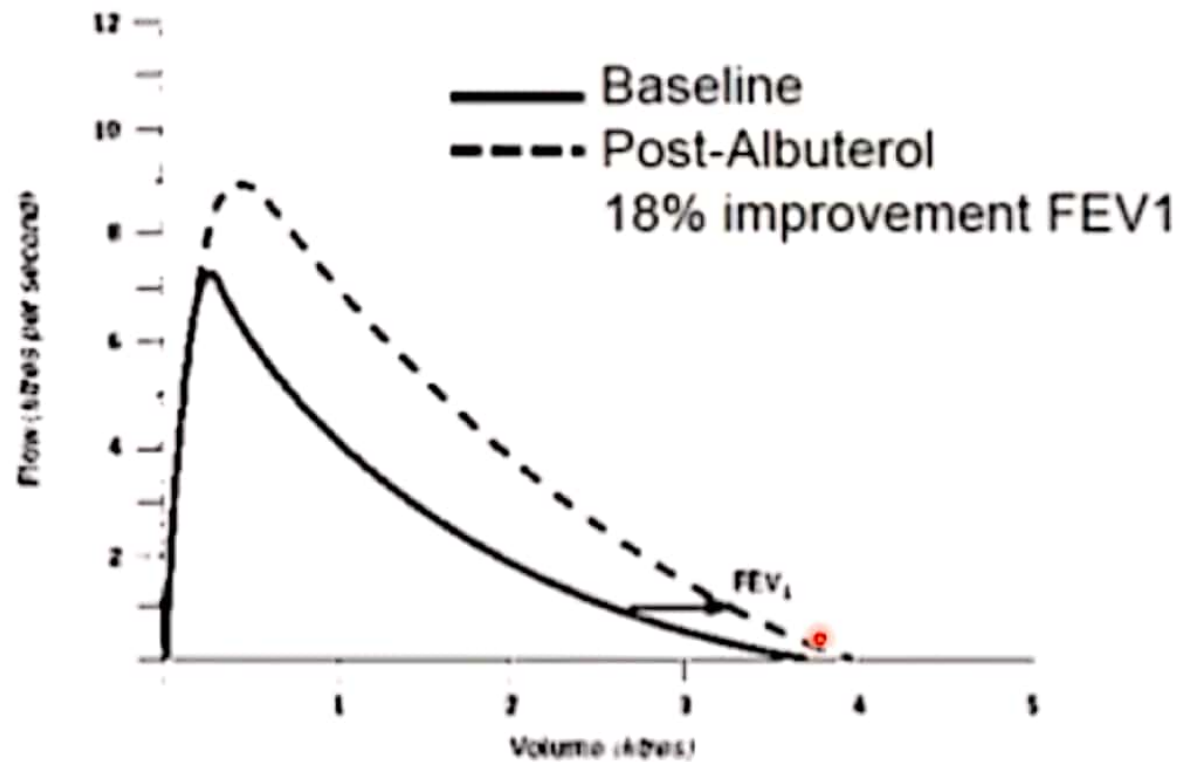


Restriction

Spirometry



(+) Bronchodilator Test



Management

- * non-pharmacological:
 - ① Avoid anything that provokes asthma sym. such as allergen, drugs, (triggers)
 - ② detect the comorbidities that interfere with control of b. asthma such as allergic rhinitis, obesity, OSA (obstructive sleep apnea)

"pharmacological Ht not enough without non pharmacological Ht"

* pharmacological Ht

Controller med. (maintenance Ht)

- ↳ Reduce airway inflammation
- ↳ Control symptoms
- ↳ Reduce future risk

Reliever med.

- ↳ as needed relief of breakthrough symptoms during exacerbation

"bronchodilator Ht" ↳ relaxation of Ms

↳ LABA

(Inhaled long acting β_2 -agonist)

↳ ICS (Inhaled Corticosteroid)

↳ LTRA (Montelukast) (Leukotriene receptor antagonist)

mainly SABA

"short acting β_2 -agonist"

↳ add-on Ht

- ↳ LAMA long acting muscarinic antagonists
- ↳ Anti-IgE
- ↳ Anti-IL5
- ↳ Azithromycin

step 4
 4. اسيتيل كولين مستقبلات مضاد
 5. الازيترومايسين

↳ Salmeterol → usually used in combination with ICS
 ↳ Formoterol → act ~~both~~ controller & reliver

↳ rapid onset long-duration as

S T R S N O T E B O O salmeterol

Adults & adolescents not in children (3)

	Adults and adolescents	Children 6-11 years	Children 5 years and younger
Step I	As-needed low-dose ICS-formoterol <i>(Low-dose ICS taken whenever SABA taken)</i>	<ul style="list-style-type: none"> • <i>Low-dose ICS taken whenever SABA taken</i> • <i>Daily low-dose ICS</i> 	As-needed SABA
Step II	<ul style="list-style-type: none"> • Daily low-dose ICS • As-needed low-dose ICS-formoterol <i>(LTRA, or Low-dose ICS taken whenever SABA taken)</i>	Daily low-dose ICS <i>(LTRA, or Low-dose ICS taken whenever SABA taken)</i>	Daily Low-dose ICS <i>(LTRA, or intermittent ICS)</i>
Step III	<ul style="list-style-type: none"> • Low-dose ICS-LABA • Low-dose ICS-formoterol <i>(Medium-dose ICS, or low-dose ICS+LTRA)</i>	<ul style="list-style-type: none"> • Low-dose ICS-LABA • Medium-dose ICS <i>(low-dose ICS+LTRA)</i>	Double low-dose ICS <i>(Low-dose ICS+LTRA)</i>
Step IV	<ul style="list-style-type: none"> • Medium-dose ICS-LABA • Medium-dose ICS-formoterol <i>(add-on tiotropium, or add-on LTRA)</i>	Medium-dose ICS-LABA <i>(add-on tiotropium, or add-on LTRA)</i> Refer for expert advice	Continue double low-dose ICS and refer for specialist assessment
Step V	High-dose ICS-LABA +/- add-on therapy	High-dose ICS-LABA +/- add-on therapy	

Q1

During the **past 4 weeks**, how often did your asthma prevent you from getting as much done at work, school or home?

Score:

All of the time

1

Most of the time

2

Some of the time

3

A little of the time

4

None of the time

5

Q2

During the **past 4 weeks**, how often have you had shortness of breath?

Score:

More than once a day

1

Once a day

2

3-6 times a week

3

1-2 times a week

4

Not at all

5

Q3

During the **past 4 weeks**, how often did your asthma symptoms (wheezing, coughing, chest tightness, shortness of breath) wake you up at night or earlier than usual in the morning?

Score:

4 or more times a week

1

2-3 nights a week

2

Once a week

3

Once or twice

4

Not at all

5

Q4

During the **past 4 weeks**, how often have you used your reliever inhaler (usually blue)?

Score:

3 or more times a day

1

1-2 times a day

2

2-3 times a week

3

Once a week or less

4

Not at all

5

Q5

How would you rate your **asthma control** during the **past 4 weeks**?

Score:

Not controlled

1

Poorly controlled

2

Somewhat controlled

3

Well controlled

4

Completely controlled

5

Total Score

What does your score mean?

Subject: _____

* in PE with uncontrolled Asthma, before doing any thing firstly rule out these causes before stepping up medication.

- ① Poor inhaler technique
- ② poor medication adherence
- ③ Incorrect dx of asthma
- ④ Comorbidities & complicating conditions
- ⑤ Ongoing exposure to sensitizing or irritant agents or use of NSAIDs or BB

* Acute asthma exacerbations ⇒ ICS should be ↑ at least doubled

- ↳ Assess severity of the exacerbation.
- ↳ Causes of the exacerbations
- ↳ Complications
- ↳ Alternative dx
- ↳ Current medications

- (PE):
- ① vital signs (LOC, T, BP, wheeze, ---)
 - ② Complicating factor (anaphylaxis, pneumonia, pneumothorax)
 - ③ Signs of alternative conditions that could explain acute breathlessness

* Severity of exacerbation ⇒ next page Pic

- Management :-

- ① repeated administration of inhaled SABA
- ② controlled O₂ Therapy
- ③ systemic corticosteroids
- ④ Re evaluate after 1 hour
- ⑤ Double the dose of her controller medication for 2-4 weeks
- ⑥ Follow up after 1 week

S T A R S N O T E B O O K

5

Severity of Exacerbation

Mild-Moderate

- Talks in phrases
- Prefers sitting to lying
- Increased RR
- Not agitated
- No use of accessory muscles
- PR 100-120 bpm
- O₂ saturation (room air) 90-95% (>95% in young children)
- PEF >50% predicted or best

Severe

- Talks in words
- Sits hunched forwards
- RR > 30/min
- Agitated
- Accessory muscles in use
- PR >120 bpm ((>200 bpm(0–3 years), >180 bpm(4–5 years))
- O₂ saturation (room air) < 90% (<92% in young children)
- PEF </= 50% predicted or best