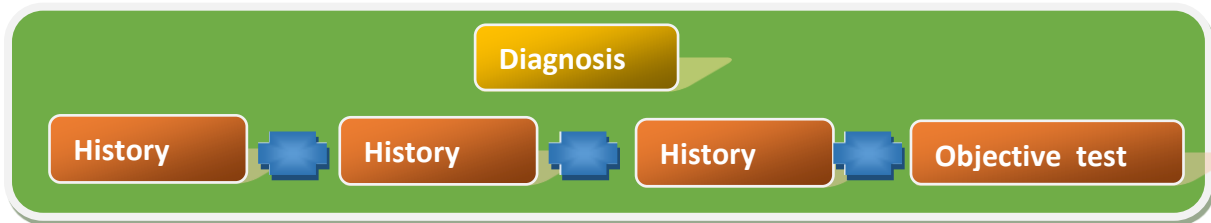


## **Diagnosis of Asthma in adult**



History taking



### Manners of History takings-

- Greet the Pt.
- Shake the Pt. hand
- Introduce yourself, identify your patient and gain consent to speak
- Non-verbal communication -
  - Eye contact
  - Sitting position, ensure that pt. is comfortable
  - Nodding of head
  - Facial gestures
- verbal communication
  - Appropriate language
  - Avoid jargon and technical terms
  - Pitch, Volume
  - Rate and intonation
- Ask pt. relevant question one at a time
- Listen carefully
- Interrupt when necessary without inhibiting pt.
- Stablish good relationship with pt.
- Summarize information

### History-

#### Present illness-

- Specific symptoms : cough, wheeze, shortness of breath, nasal symptoms
- Severity of symptoms : how they affect normal activity, time off work
- Frequency of symptoms: how often- daily, weekly or less frequent
- Variability of symptoms: seasonal or diurnal variability
- When symptoms started:
- What makes symptoms worse: identify possible triggers
- What makes symptoms better
- Whether they have had these symptoms before

### Past Medical history-

- Any hospital admissions with respiratory problems –
- Cardiac disease -
- Congenital abnormalities –

Personal history- Hay fever, Eczema, Perennial rhinitis & Other allergic disease

### Family history-

- Asthma, Eczema, Hay fever, Perennial rhinitis
- Any respiratory disease

### Social history & life style-

- Contact with pets or other animals
- Hobbies - glues, solder, paints, latex etc are all possible triggers
- Exercise - Do they participate in regular exercise?  
Has their exercise been affected by symptoms?
- Living conditions - Have they moved house recently?  
- as old houses may have molds or loose plaster, paint fumes
- Smoking –
- Recreational drug use

### Occupational history-

- Current and previous employment
- Are symptoms better on days away from work or on holidays?
- Do other people in the workplace have similar symptoms?

H/O medicine- B- blocker, NSAIDs, Aspirin

### Signs–

- Sign of respiratory distress - Tachypnoea, prominence of accessory resp. M.
- Breath sound - Vesicular with prolonged expiration on both sides
- High pitched rhonchi – widespread, bilateral
- Tachycardia, bradycardia, pulsus paradoxus & Cyanosis (severe case)

### Investigation -

- Objectives test X-ray Chest P/A view.
- Measurement of allergen – specific Ig E – elevated
- CBC – may show eosinophilia

## Objective test

### Bronchodilator Reversibility Test

- **Materials need for test:** PFM/ Spirometry, Short acting BD, Spacer
- PEF is less reliable than spirometry
- Test may be lost during severe exacerbation/ Viral infection
- **Method:** -
  - Stop BD prior to test as following-

- ❖ SABA >4hrs
- ❖ LABA > 15hrs
- ❖ Ipratropium-4hrs
- ❖ Tiotropium- 36 hours

- Measure Baseline PEFr or FEV<sub>1</sub>
- Give BD by large volume spacer

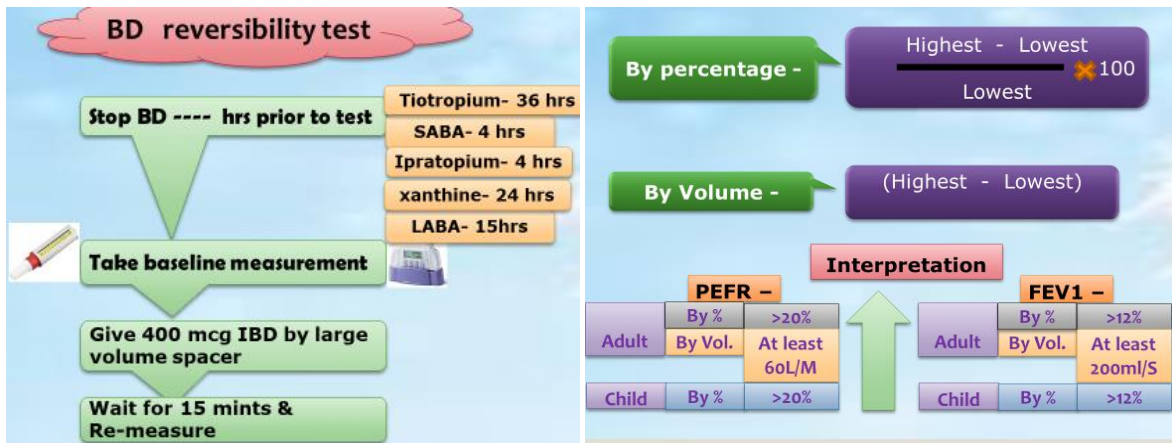
- ❖ 400 mcg Inhaled Salbutamol or
- ❖ 160 mcg inhaled Ipratropium

4 divided dose, 30 S. interval

- Wait for 15 minutes in case of SABA & 30 mints in case of Ipratropium
- Measure PEFr or FEV<sub>1</sub> (depends on baseline device)

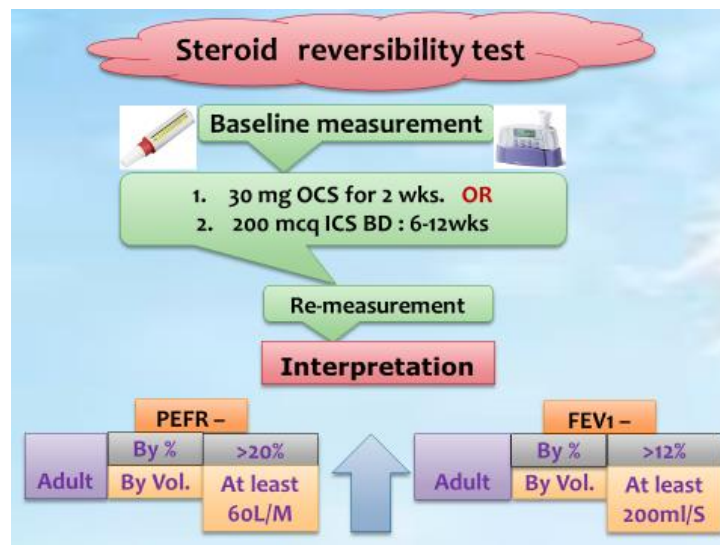
- **Interpretation –**

- **By PFM-**  
Adult: by % & by volume (below 12 yrs. of child, not see by volume)
- **By Spirometry –**  
Adult: by % & by volume (below 12 yrs. of child, not see by volume)  
**Greater confidence if increase is > 15% & >400 ml**



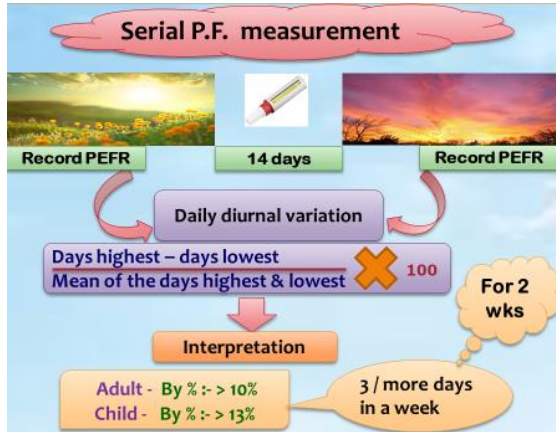
## Steroid Reversibility Test

- Done –
  - Diagnosis of asthma is suspected
  - Variable symptoms
  - Previous history suggestive of asthma
  - Previous history of atopic disease
- NICE guidelines suggest that a trial of oral steroids be used –
  - 30 mg prednisolone (in adults) as a single daily dose for two weeks
  - 200 mcg ICS (beclomethasone) twice daily or equivalent another ICS for 6-12 weeks
- Results: Reference – Updated GINA 2017
  - Increase in FEV<sub>1</sub> by >12% & >200ml after 4wks Rx, outside RTI
  - PEF increase by >20% from baseline after 4wks Rx, outside RTI
- Results: Reference -Nice guideline
  - PEFR: Increase in FEV<sub>1</sub> by >20% & >at least 60 L/M
  - FEV<sub>1</sub>: Increase in FEV<sub>1</sub> by >12% & >200ml/S



## Serial Peak Flow measurement

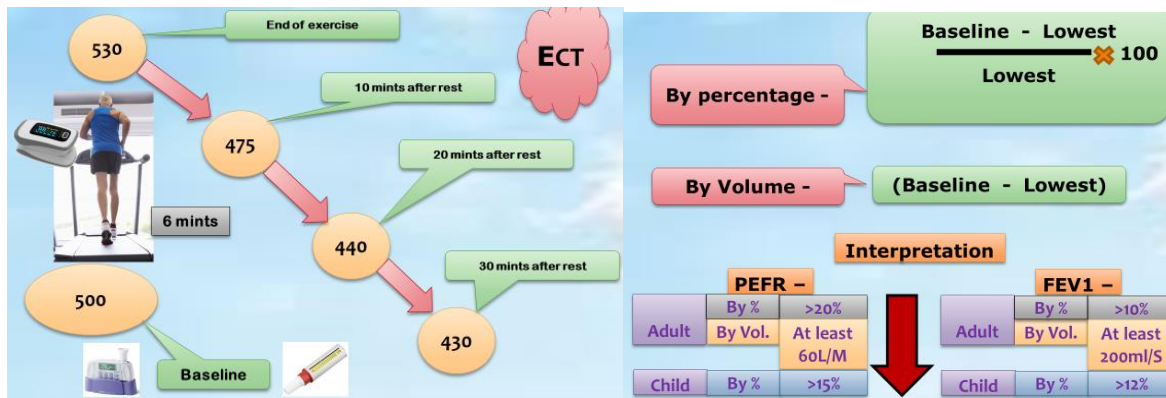
- If possible, the patient is issued with a peak flow meter
- Record their own readings in a PEF diary for two weeks
- Best of 3 readings in the morning & the best of 3 in the early evening for 14 days
- A variation of 5% is normal even in people who do not have asthma
- Use the same PEF meter each time
- PEF may vary by up to 20% between different meter
- SPFR: - Diagnosis of occupational asthma



Mr. X, 25 yrs	At morning	At early evening	Diurnal variation
1 <sup>st</sup> day	400	500	22%
2 <sup>nd</sup> day	360	430	17.7%
3 <sup>rd</sup> day	370	435	16%
4 <sup>th</sup> day	370	400	7.7%
5 <sup>th</sup> day	380	410	7.5%
6 <sup>th</sup> day	370	395	6.5%
7 <sup>th</sup> day	340	400	16.2%
8 <sup>th</sup> day	350	380	8.2%
9 <sup>th</sup> day	370	420	12.6%
10 <sup>th</sup> day	365	400	9.15%
11 <sup>th</sup> day	370	405	9%
12 <sup>th</sup> day	365	415	12.8%
13 <sup>th</sup> day	360	395	9.27%
14 <sup>th</sup> day	375	420	11.3%

## Exercise Challenge Test

- Measure baseline PEF or FEV1
- The patient exercises e.g. Thread meal / Running up to 4-6 minutes
  - Until achieve 80-90% of Maximum HR by using Pulse Oximeter
  - Maximum HR = (220-Age)
- PEF/ FEV1 is re-measured at the end of exercise and every 10 mints for 30 mins
- At the end of exercise: PEF is increased due to Release of stress hormone



### Another test

- Methacholine challenge testing (Bronchoprovocation)
- Inflamed airway-
  - Neox test (NO) - discolor due to release of NO from inflamed area, Raised temp.
  - EBT test - exhaled breath temp
- Eosinophil in sputum:
  - Asthma COPD overlap syndrome
  - Steroid dose continues

### Diagnostic flow chart

Flow chart of objective test for diagnosis of asthma

