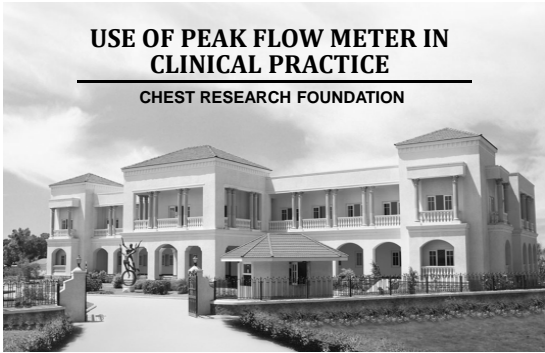


**USE OF PEAK FLOW METER IN
CLINICAL PRACTICE**

CHEST RESEARCH FOUNDATION



www.crfindia.com

Original Wright's
Peak Flow Meter




1958

Mini Wright's
Peak Flow Meter




1970

Mini Wright's Peak
Flow Meter




1970

Mini Wright's Peak
Flow Meter with new
European scale

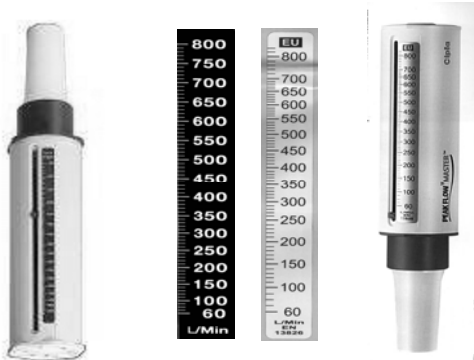


2003




Peak Flow master with
new European scale



2003




OTHER TYPES OF PEAK FLOW METERS

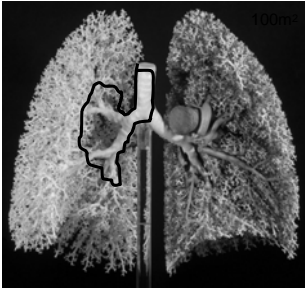
**WHAT DOES PEAK FLOW
METER MEASURE?**

- Measures Peak Expiratory Flow Rate during forced maneuver
- Does not measure lung volumes

Obstruction in the airways will decrease the flow of air that can be removed with force from the lungs



PEFR – MEASURES LARGE AIRWAY OBSTRUCTION




Insensitive to measure small airflow obstruction

How to measure PEFR

Using peak flow is as simple as taking a deep breath and blowing out a candle.

Blow fast!!



How To Measure PEFR

- Person is asked to blow as hard as possible from a position of maximal inspiration.
- PEF measurement is effort dependent, hence patient need to be coached

STEPS


- Place INDICATOR at the base of the numbered scale
- Fix new MOUTH-PIECE to Peak Flow Meter
- Take a DEEEEP breath
- Place PFM in your mouth and seal your lips
- Blow out as HARD as FAST as you can
- Note down the number you get from the scale
- REPEAT Above Steps 2 more time
- Note down the HIGHEST of the three values obtained.

Normal fixed predicted PEFR??

NO

Depends upon:

- Age
- Sex
- Height



Nunn and Greg Equation for predicted values
(Based upon age and height)

Establishing ‘Personal Best’ PFR

- Record PFR twice a day during monitoring period of 2-3 weeks
- On both occasions record PFR at least 3 times.
- Note the Highest Number of that day.
- Personal Best is the **highest measurement achieved** when patient is free from signs and symptoms.

Diurnal Variability

Highest PFR-Lowest PFR
PEF Variability = -----X 100
 Highest PFR Reading

Example:-

400-350
PEF Variability = ----- X 100 = 12.5%
 400

Normal Diurnal Variability < 20%

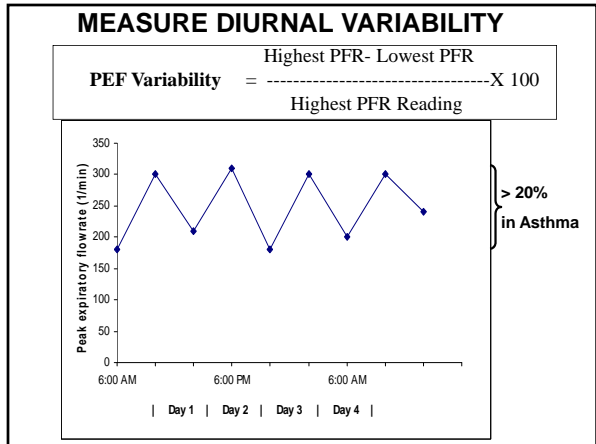
- ### Role of Peak Flow Meter in Practice
- To diagnose Asthma
 - To grade the severity of Asthma
 - Useful follow up tool for Asthma
 - To identify impending exacerbations
 - To identify triggers
 - To diagnose Occupational Asthma

ROLE OF PEAK FLOW METER IN ASTHMA DIAGNOSIS

- Can it diagnose early asthma?
No
- Can it diagnose moderate-severe asthma?
Yes

HOW CAN PEFR DIAGNOSE ASTHMA?

- ### MEASURE REVERSIBILITY WITH SALBUTAMOL 400mcg
- Baseline PEFR
 - Inhaled Salbutamol 400 mcg
 - Wait 15 mins
 - Post BD improvement > 20%
 suggests reversible airway disease, likely asthma



ROLE OF PEAK FLOW METER IN ASTHMA ASSESSING SEVERITY

Intermittent	PEFR >80% Variability <20%
Mild Persistent	PEFR >80% Variability 20-30%
Moderate persistent	PEFR 60-80% Variability >30%
Severe Persistent	PEFR <60% Variability >30%

USEFUL TOOL FOR FOLLOW UP

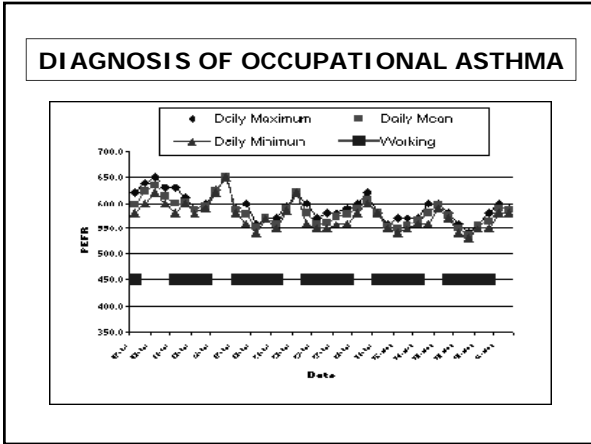
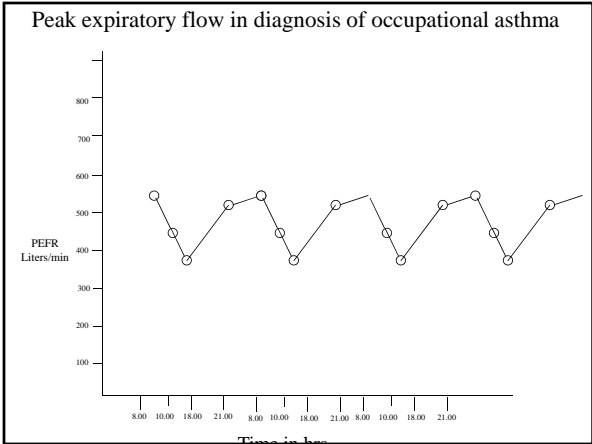
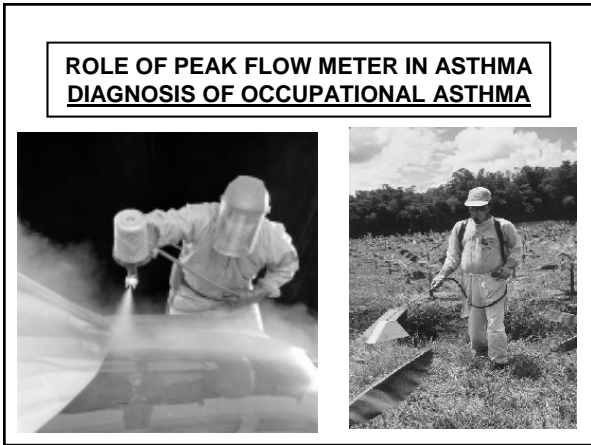
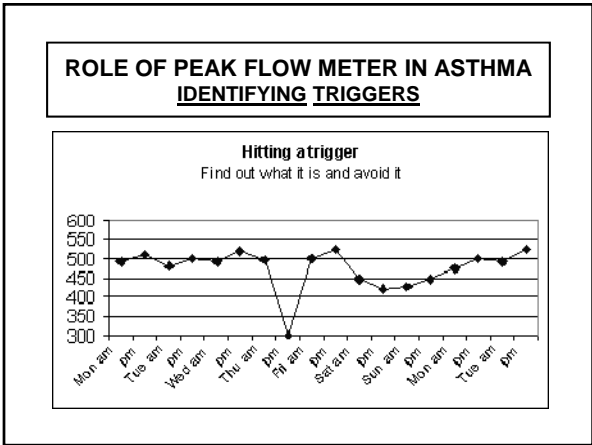
Patients who come for routine follow up for their asthma perform PEFr in the clinic

ROLE OF PEAK FLOW METER IN ASTHMA TO IDENTIFY IMPENDING EXACERBATIONS

POOR PERCEIVERS

Benefit the most with the use of a Peak Flow Meter

If PEF decreases by > 20% of the person's



**ROLE OF PEAK FLOW METER IN COPD
DIAGNOSIS**

- Can it diagnose early COPD?
No
- Can it diagnose mild-moderate-severe COPD?

No, it can only diagnose airflow obstruction.

But, it is a good screening tool to detect airflow obstruction and suspect COPD



TAKE HOME MESSAGE

KEEP A PEAK FLOW METER HANDY

- Useful tool for day to day monitoring of asthma by patient.
- Helps identify Asthma triggers
- Very useful in diagnosis of occupational asthma
- **DOES NOT REPLACE SPIROMETRY**

THANK YOU