

# ***GOLD* Guidelines 2019 :**

## **Diagnosis and Assessment**



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# Pathways to the diagnosis of COPD

## SYMPTOMS

Shortness of breath  
Chronic cough  
Sputum

## RISK FACTORS

Host factors  
Tobacco  
Occupation  
Indoor / Outdoor pollution



## SPIROMERY

Required to  
establish diagnosis

# COPD : symptomatology

- Chronic and progressive dyspnoea
- Cough
- Sputum production :
  - characteristically, difficult to expectorate in early stages
- Wheezing and chest tightness
- Systemic symptoms are not uncommon
  - fatigue, weight loss, anorexia, depression, anxiety.

# Spirometry

- Patient with H/O of exposure to risk factors for COPD need to undergo *spirometry* for the diagnosis
- Post-bronchodilator FEV1/FVC < 0.70 confirms the presence of persistent airflow limitation
- Assessment of COPD is required to determine the **level of airflow limitation**

# Other causes of Chronic Cough

Extra thoracic	Intra thoracic
Chronic Allergic Rhinitis	Asthma
Post Nasal Drip Syndrome (PNDS)	Lung Cancer
Upper Airway Cough Syndrome (UACS)	Tuberculosis
Gastroesophageal Reflex (GERD)	Bronchiectasis
Drug Induce (e.g. ACE Inhibitors)	Left Heart Failure
	ILD
	Cystic Fibrosis

# Goals of assessment of COPD

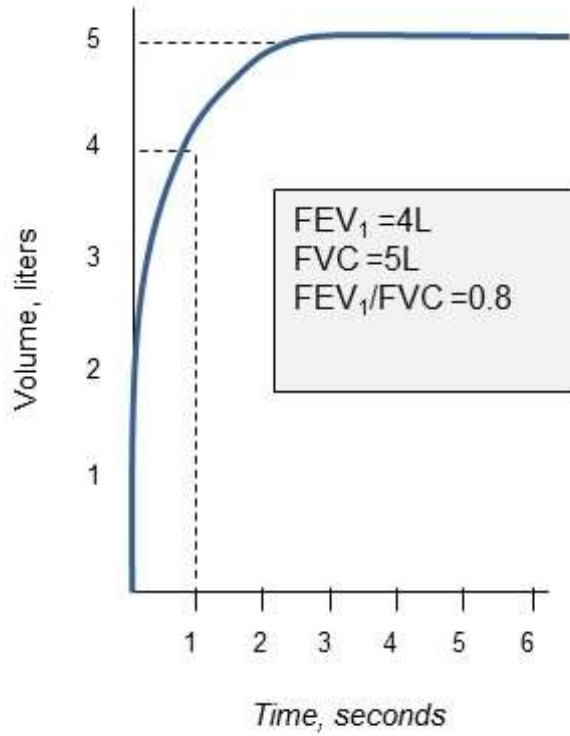
- To determine the level of airflow limitation.
- Essential to assess for management of :
  - stable COPD and
  - acute exacerbation of COPD

# Assessment Methodology

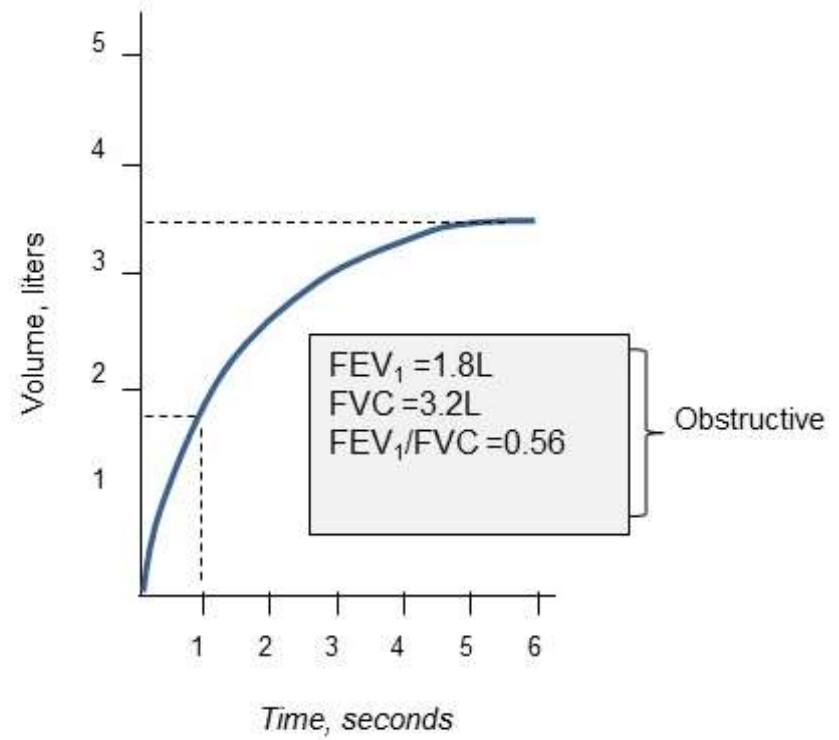
- Determine the level of airflow limitation
- Classification of severity of airflow limitation
- Assessment of symptoms
- Assessment of risk of exacerbation
- Assessment of concomitant comorbidities
- Combined COPD assessment : ABCD assessment tool

# Spirometry

## Healthy patient

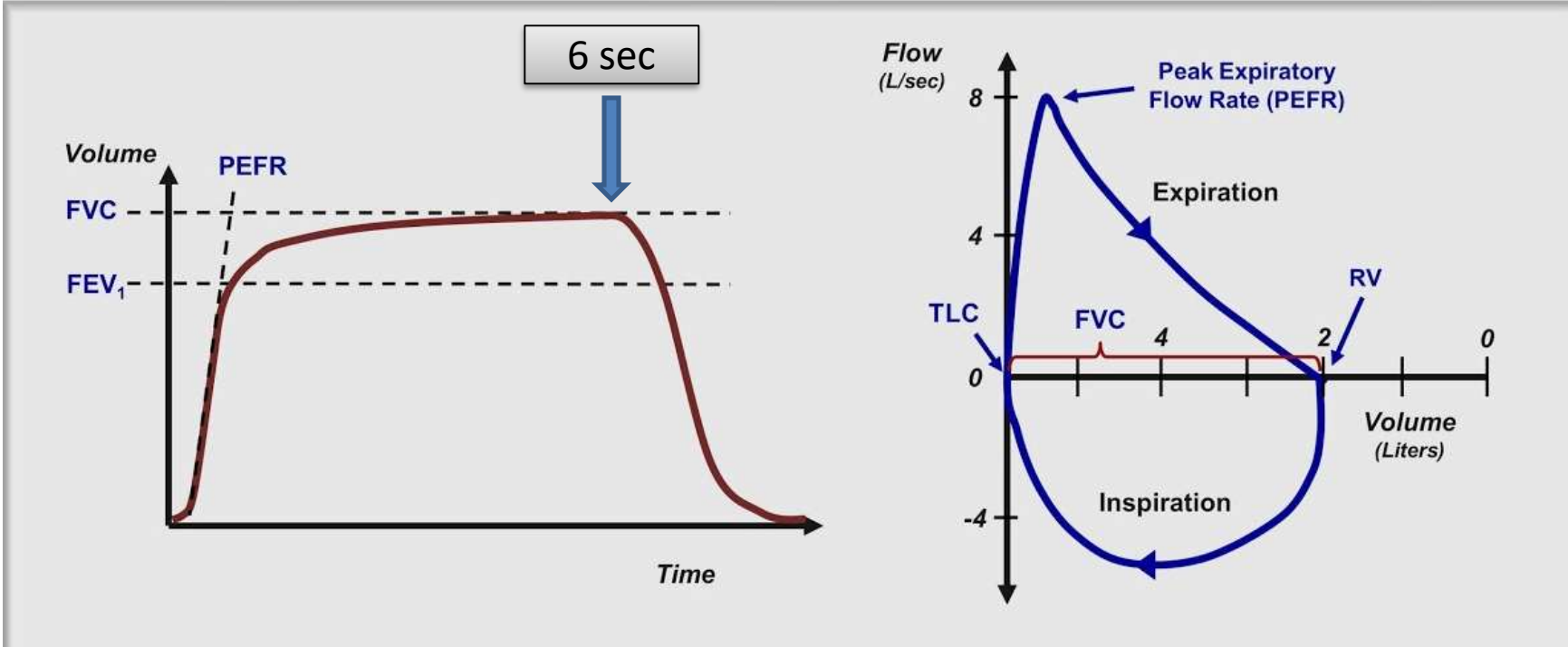


## Patient with obstructive lung disease

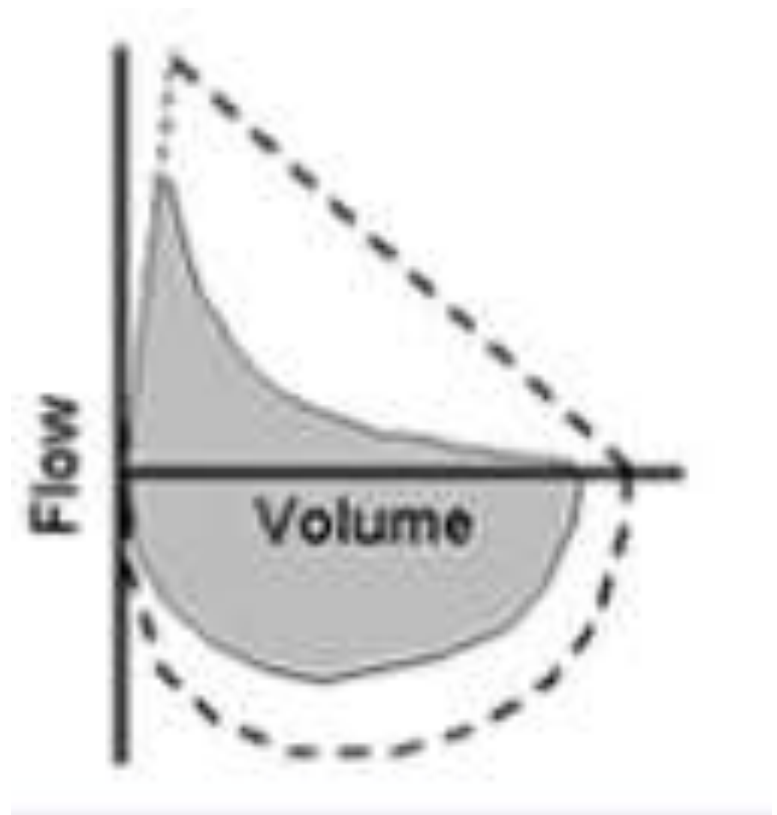
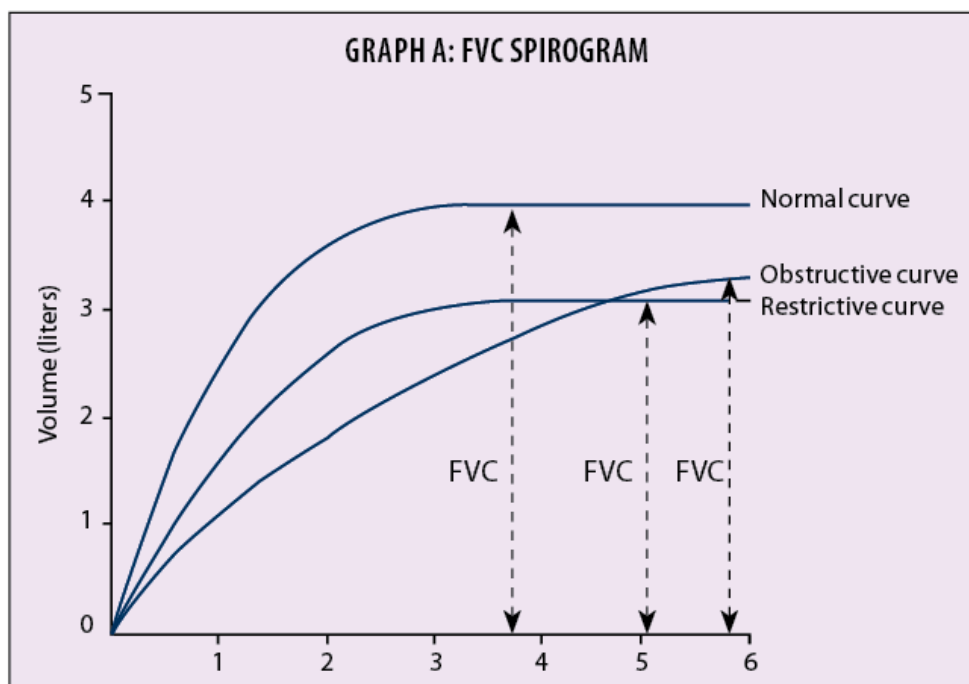




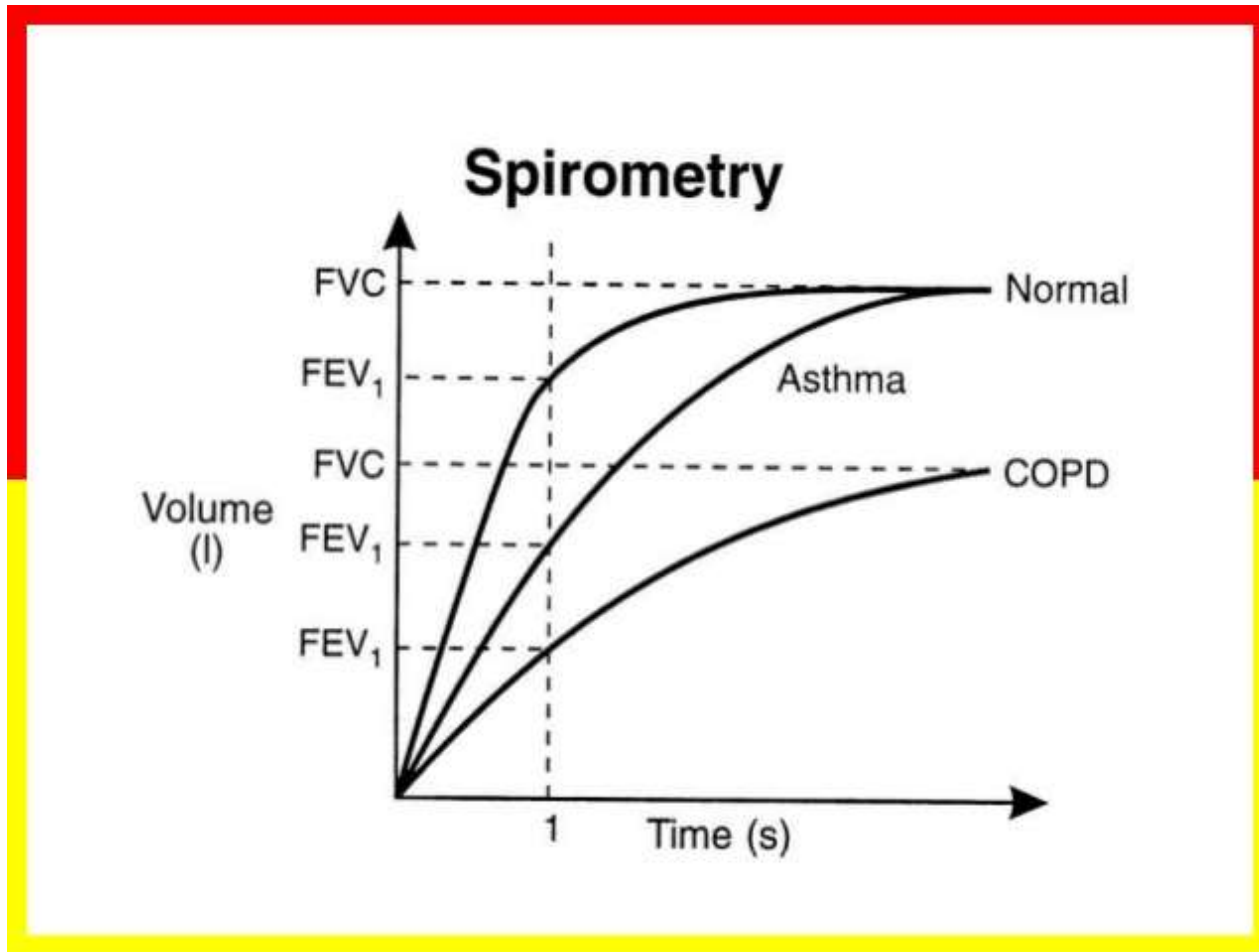
# Spirometry- Loop



# Spirometry : Loop of obstructive disease



# Obstructive Disease



# Tools of Assessment

- Modified Medical Research Council (mMRC) Questionnaire
- COPD Assessment Test (CAT)
- Chronic Respiratory Questionnaire (CCQ)
- St George's Respiratory Questionnaire (SGRQ)

# Assessment of symptoms

## Modified MRC dyspnea scale

<b>mMRC GRADE 0</b>	I only get breathless with strenuous exercise
<b>mMRC GRADE 1</b>	I get short of breath when hurrying on the level or walking up a slight hill
<b>mMRC GRADE 2</b>	I walk slower than people of the same age on the level because of breathlessness or I have to stop for breath while walking on my own pace on the level
<b>mMRC GRADE 3</b>	I stop for breath after walking about 100 meters or after few minutes on the level
<b>mMRC GRADE 4</b>	I am too breathless to leave the house or I am breathless when dressing or undressing

# The Global Initiative for Chronic Obstructive Lung Disease (GOLD)

## Classification of airflow limitation severity in COPD (Based on post bronchodilator FEV<sub>1</sub>)

<b>GOLD 1:</b>	<b>Mild</b>	<b>FEV<sub>1</sub> ≥ 80% predicted</b>
<b>GOLD 2:</b>	<b>Moderate</b>	<b>50% ≤ FEV<sub>1</sub> &lt; 80% predicted</b>
<b>GOLD 3:</b>	<b>Severe</b>	<b>30% ≤ FEV<sub>1</sub> &lt; 50% predicted</b>
<b>GOLD 4:</b>	<b>Very Severe</b>	<b>FEV<sub>1</sub> &lt; 30% predicted</b>

# COPD Assessment Test (CAT)

SCORE

I never cough	0	1	2	3	4	5	I cough all the time	<input type="text"/>
I have no phlegm (mucus) on my chest at all	0	1	2	3	4	5	My chest is full of phlegm (mucus)	<input type="text"/>
My chest does not feel tight at all	0	1	2	3	4	5	My chest feels very tight	<input type="text"/>
When I walk up a hill or a flight of stairs I am not out of breath	0	1	2	3	4	5	When I walk up a hill or a flight of stairs I am completely out of breath	<input type="text"/>
I am not limited to doing any activities at home	0	1	2	3	4	5	I am completely limited to doing all activities at home	<input type="text"/>
I am confident leaving my home despite my lung condition	0	1	2	3	4	5	I am not confident leaving my home at all because of my lung condition	<input type="text"/>
I sleep soundly	0	1	2	3	4	5	I do not sleep soundly because of my lung condition	<input type="text"/>
I have lots of energy	0	1	2	3	4	5	I have no energy at all	<input type="text"/>
<b>TOTAL SCORE</b>								<input type="text"/>

# COPD Assessment Test (CAT)

प्राप्तांक

में कभी नहीं खॉसता/खॉसती

0

1

2

3

4

5

में हमेशा खॉसता/खॉसती हूँ

मेरी छाती में बिल्कुल भी बलगम (म्युकस) नहीं है

0

1

2

3

4

5

मेरी छाती बलगम (म्युकस) से पूरी तरह भरी हुई है

मेरी छाती में बिल्कुल भी जकड़न महसूस नहीं होती

0

1

2

3

4

5

मेरी छाती में बहुत अधिक जकड़न महसूस होती है

जब मैं किसी पहाड़ी पर या सीढ़ियों की एक पंक्ति पर चढ़ता/चढ़ती हूँ तो मेरी साँस नहीं फूलती

0

1

2

3

4

5

जब मैं किसी पहाड़ी पर या सीढ़ियों की एक पंक्ति पर चढ़ता/चढ़ती हूँ तो मेरी साँस बहुत फूल जाती है

घर पर कोई गतिविधियाँ निभाने में मैं सीमाबद्ध महसूस नहीं करता/करती

0

1

2

3

4

5

घर पर कोई गतिविधियाँ निभाने में मैं बहुत सीमाबद्ध महसूस करता/करती हूँ

अपने फेफड़े की दशा के बावजूद मैं आत्मविश्वास के साथ अपने घर से बाहर निकल जाता/जाती हूँ

0

1

2

3

4

5

अपने फेफड़े की दशा के कारण अपने घर से बाहर निकलने का मुझमें बिल्कुल भी आत्मविश्वास नहीं है

मैं गहरी नींद सोता/सोती हूँ

0

1

2

3

4

5

अपने फेफड़ों की स्थिति के कारण मैं गहरी नींद नहीं सो पाता/पाती

मुझमें बहुत ऊर्जा है

0

1

2

3

4

5

मुझमें बिल्कुल भी ऊर्जा नहीं है

कुल प्राप्तांक



# Assessment of exacerbation risk

- acute worsening of respiratory symptoms that result in additional therapy
- **Classified as:**
  - Mild** (Can be controlled with an increase in dosage of regular medications )
  - Moderate** (Requires treatment with systemic corticosteroids or antibiotics )
  - Severe** (patient requires hospitalization or visits the emergency room).
- Severe exacerbations may also be associated with acute respiratory failure

# ABCD assessment

- **GOLD group A:** Low symptom severity, low exacerbation risk.
- **GOLD group B:** High symptom severity, low exacerbation risk.
- **GOLD group C:** Low symptom severity, high exacerbation risk.
- **GOLD group D:** High symptom severity, high exacerbation risk.

# Refined *ABCD* assessment tool

**Spirometrically confirmed diagnosis**



**airflow limitation**



**Assessment of exacerbation risk**

**GOLD**  
FEV1/FVC <0.7

**GOLD-4** <30%

**GOLD-3** 30-49%

**GOLD-2** 50-79%

**GOLD-1** >80%

**FEV1**  
(% predicted)

**exacerbations**

**>2 per year**

**0-1 per year**

**C**  
Low symptoms  
High exacerbation

**D**  
High symptoms  
High exacerbation

**A**  
Low symptoms  
Low exacerbation

**B**  
High symptoms  
Low exacerbation

**mMRC 0-01**  
**CAT <10**

**mMRC >2**  
**CAT >10**

**Symptoms**

# Additional investigations

- Imaging
- Lung volumes and diffusing capacity
- Oximetry and arterial blood gas measurement
- Functional assessment test
  - Exercise testing and
  - assessment of physical activity
    - e.g. 6-minute walk test

# Summary

- COPD should be considered in patient who has dyspnoea, chronic cough or sputum production, and/or a history of exposure to risk factors for the disease.
- Spirometry is required to make the diagnosis; the presence of a post-bronchodilator  $FEV_1/FVC < 0.70$  confirms the presence of persistent airflow limitation.
- The goals of COPD assessment are to determine the level of airflow limitation.
  - Role Management of Stable COPD and
  - Acute Exacerbation of COPD