

Singapore Thoracic Society (STS)

The Academic Respiratory Initiative for Pulmonary Health (TARIPH)

JOINT WEBINAR ON COPD GOLD 2023 GUIDELINES

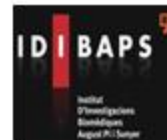
Saturday, 12 August 2023 | 14:00 – 15:10 Hours (UTC+8)



TARIPH
CENTRE FOR RESPIRATORY
RESEARCH EXCELLENCE
BRINGING RESEARCH TO PATIENTS
THROUGH PARTNERSHIPS

Definition, Causes and Risk Factors

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Disclosures

Research grants/clinical trials:	AstraZeneca, GSK, Menarini,
Lector for:	AstraZeneca, Chiesi, Menarini, GSK, Zambon
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Consultant:	None
Employer (including part-time):	None
Tobacco Industry relationship:	None





GOLD 2022 - Definition

- *Chronic Obstructive Pulmonary Disease (COPD) is a common, preventable, and treatable disease that is characterized by persistent respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gases.*



WHAT IS COPD: GOLD 2023

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Definition

- Chronic Obstructive Pulmonary Disease (COPD) is a **heterogeneous** lung condition characterized by **chronic respiratory symptoms** (dyspnea, cough, sputum production, exacerbations) due to **abnormalities of the airways** (bronchitis, bronchiolitis) **and/or alveoli** (emphysema) that cause **persistent, often progressive, airflow obstruction**.

Causes and Risk Factors

- COPD results from gene (G)-environment (E) interactions occurring over the lifetime (T) of the individual (**GETomics**) that can damage the lungs and/or alter their normal development/aging processes.
- The main **environmental** exposures leading to COPD are **tobacco** smoking and the inhalation of toxic particles and gases from **household and outdoor air pollution**, but other environmental and host factors (including abnormal lung development and accelerated lung aging) can also contribute.
- The most relevant (albeit rare) genetic risk factor for COPD identified to date are mutations in the SERPINA1 gene that lead to **α -1 antitrypsin deficiency**. A number of other genetic variants have also been associated with reduced lung function and risk of COPD, but their **individual effect size is small**.



Proposed Taxonomy (Etiotypes) for COPD

Table 1.1

Classification	Description
Genetically determined COPD (COPD-G)	Alpha-1 antitrypsin deficiency (AATD) Other genetic variants with smaller effects acting in combination
COPD due to abnormal lung development (COPD-D)	Early life events, including premature birth and low birthweight, among others
Environmental COPD	
Cigarette smoking COPD (COPD-C)	<ul style="list-style-type: none"> • Exposure to tobacco smoke, including <i>in utero</i> or via passive smoking • Vaping or e-cigarette use • Cannabis
Biomass and pollution exposure COPD (COPD-P)	Exposure to household pollution, ambient air pollution, wildfire smoke, occupational hazards
COPD due to infections (COPD-I)	Childhood infections, tuberculosis-associated COPD, WHIV-associated COPD
COPD & asthma (COPD-A)	Particularly childhood asthma
COPD of unknown cause (COPD-U)	

*Adapted from Celli et al. (2022) and Stolz et al. (2022)



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Diagnostic Criteria

- In the **appropriate clinical context** (see 'Definition' & 'Causes and Risk Factors' above), the presence of non-fully reversible airflow limitation (i.e., **FEV1/FVC < 0.7 post-bronchodilation**) measured by spirometry confirms the diagnosis of COPD (discussion on LLN)
- Some individuals can have respiratory symptoms and/or structural lung lesions (e.g., emphysema) and/or physiological abnormalities (including low-normal FEV1, gas trapping, hyperinflation, reduced lung diffusing capacity and/or rapid FEV1 decline) without airflow obstruction (FEV1/FVC \geq 0.7 post-bronchodilation). These subjects are labelled '**Pre-COPD**'. The term '**PRISm**' (Preserved Ratio Impaired Spirometry) has been proposed to identify those with normal ratio but abnormal spirometry. Subjects with Pre-COPD or PRISm are **at risk of developing airflow obstruction over time, but not all of them do.**



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New Opportunities

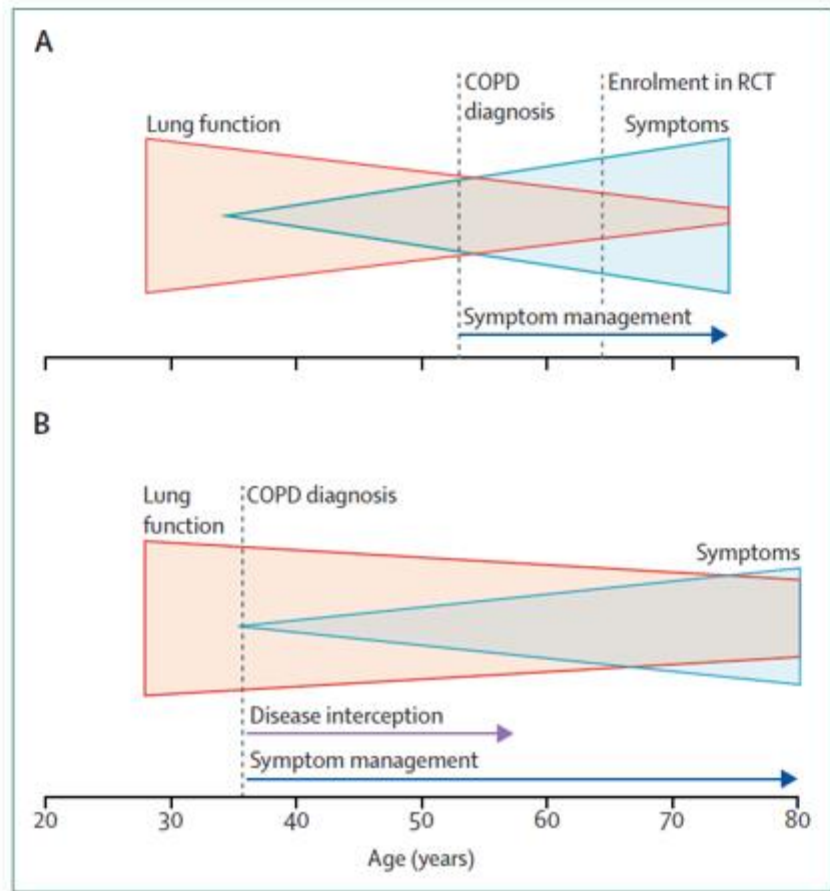
- COPD is a common, preventable, and treatable disease, but **extensive under-diagnosis and misdiagnosis** leads to patients receiving no treatment or incorrect treatment. Appropriate and earlier diagnosis of COPD can have a very significant public-health impact.
- The realization that environmental factors other than tobacco smoking can contribute to COPD, that it can start early in life and affect young individuals, and that there are precursor conditions (Pre-COPD, PRISm), opens **new windows of opportunity for its prevention, early diagnosis, and prompt and appropriate therapeutic intervention.**

Towards the elimination of chronic obstructive pulmonary disease: a *Lancet* Commission



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Current



Future



Thank you for your attention

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