



10° CONGRESSO NAZIONALE

La crescita delle cronicità in un mondo
che invecchia: differenze di genere

23 - 24 settembre 2026
Evento in modalità virtuale

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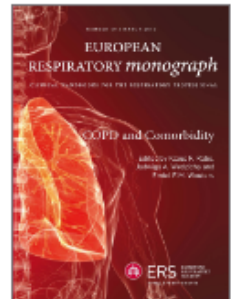
Comorbilità nella BPCO: analisi sesso-e genere-specifica

Anna Maria Moretti
Presidente Nazionale GISEG
Presidente Internazionale IGM

Prevalence of COPD and comorbidity

Shambhu Aryal | Enrique Diaz-Guzman | David M. Mannino

Page: 1-12 DOI: <https://doi.org/10.1183/1025448x.10011012>



COPD, once thought only to be a disease of the lungs, is now established as a common complex multisystem disease with multiple comorbidities that contribute to symptoms, exacerbations, hospital admissions and mortality.

The most notable of these comorbidities include cardiac and cerebrovascular disease, diabetes, hypertension, asthma, pneumonia and depression.

Estimation of the prevalence of COPD, as well as its comorbidities, is difficult because of the variability in definitions and methods used. However, recent large epidemiological studies have helped us to understand better the prevalence and effects of COPD comorbidities. The pathogenesis behind many of these comorbidities remains a focus of active investigation.

Review  Open access

Comorbidities in patients with COPD and pulmonary rehabilitation: do they matter?

Frits M.E. Franssen | Carolyn L. Rochester

European Respiratory Review 2014 23(131): 131-141; DOI: <https://doi.org/10.1183/09059180.00007613>



Comorbidities commonly associated with chronic obstructive pulmonary disease

Obstructive sleep apnoea

Lung cancer

Infections

Cardiovascular disease (Hypertension, Coronary artery diseases, **Systolic and/or diastolic left ventricular dysfunction**, Pulmonary hypertension, Peripheral vascular disease, Cerebrovascular disease, Stroke)

Skeletal muscle dysfunction and loss of muscle mass

Osteoporosis, osteopenia or osteoarthritis

Psychological disturbances (Depression, anxiety)

Cognitive impairment

Anaemia

Diabetes/metabolic syndrome

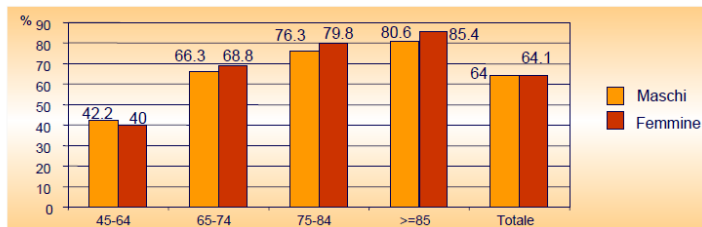
Renal insufficiency

Gastro-oesophageal reflux disease

BPCO + Malattie cardiovascolari

80.840 pazienti (64,4%) soffrono di patologie cardiovascolari

Età	Pazienti	% BPCO stessa età
45-64	15.602	41,0
65-74	26.133	67,4
75-84	30.305	77,8
>=85	8.800	83,4

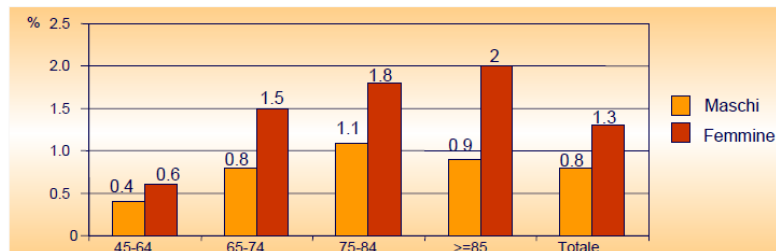


ARNO

19.168 pazienti (16%) presentano 2 su 3 delle comorbidità considerate

1.352 (1,1%) soffrono di tutte e tre le comorbidità

Età	Pazienti	% BPCO stessa età
45-64	203	0,5
65-74	428	1,1
75-84	562	1,4
>=85	159	1,5

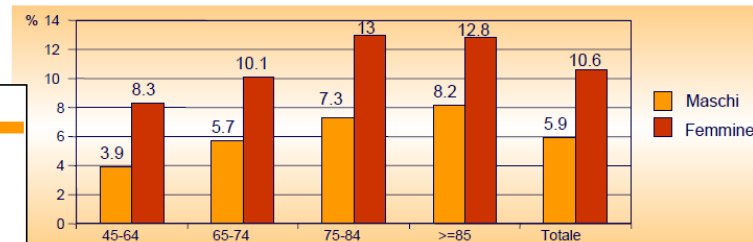


ARNO Osservatorio 1987 - 2007 - Bologna, 2 Luglio 2007

BPCO + Disturbo Depressivo

10.292 pazienti (8,1%) soffrono di disturbo depressivo

Età	Pazienti	% BPCO stessa età
45-64	2.363	6,2
65-74	2.962	7,6
75-84	3.827	9,8
>=85	1.140	10,1



ARNO Osservatorio 1987 - 2007 - Bologna, 2 Luglio 2007

> [Lancet](#). 2007 Sep 1;370(9589):797-9. doi: 10.1016/S0140-6736(07)61383-X.

From COPD to chronic systemic inflammatory syndrome?

Leonardo M Fabbri ¹, Klaus F Rabe

> [Eur Respir J](#). 2008 Jan;31(1):204-12. doi: 10.1183/09031936.00114307.

Complex chronic comorbidities of COPD

L M Fabbri ¹, F Luppi, B Beghé, K F Rabe

Chronic obstructive pulmonary disease (COPD) is defined by fixed airflow limitation associated with an abnormal pulmonary and systemic inflammatory response of the lungs to cigarette smoke.

The systemic inflammation induced by smoking may also cause chronic heart failure, metabolic syndrome and other chronic diseases, which may contribute to the clinical manifestations and natural history of COPD.

Thus COPD can no longer be considered a disease only of the lungs, as it is often associated with a wide variety of systemic consequences. A better understanding of the origin and consequences of systemic inflammation, and of potential therapies, will most likely lead to better care of patients with COPD.

Comorbidities in patients with COPD and pulmonary rehabilitation: do they matter?

Frits M.E. Franssen | Carolyn L. Rochester

European Respiratory Review 2014 23(131): 131-141; DOI: <https://doi.org/10.1183/09059180.00007613>



It is now recognised that chronic obstructive pulmonary disease (COPD) is a heterogeneous disease with many systemic features. Cardiovascular, metabolic, musculoskeletal and psychological comorbidities contribute to the morbidity and mortality in all stages of the disease.

The presence of comorbid conditions has important consequences for disease assessment and management. In addition to treatment of the structural and functional changes in the lungs, clinical programmes for COPD should also assess and manage patients' comorbidities. Thus, there is an increasing need to understand the interaction between existing therapies and comorbidities.

Medical comorbidities are common among COPD patients, and occur across the spectrum of disease severity. Multiple comorbidities often coexist and several clusters can be discriminated.

In one analysis of the prevalence of comorbidities associated with COPD, 32% had one additional condition, and 39% had two or more concurrent medical conditions. In another recent analysis, COPD patients were reported to have a median of nine comorbidities.



Individual trajectory-based care for COPD: getting closer, but not there yet

Nicolas Roche¹, Philippe Devillier², Patrick Berger³, Arnaud Bourdin⁴, Daniel Dusser¹, Jean-François Muir⁵, Yan Martinat⁶, Philippe Terrioux⁷ and Bruno Housset⁸

Chronic obstructive pulmonary disease (COPD) is a main cause of death due to interplaying factors, including **comorbidities that interfere with symptoms and response to therapy**. It is now admitted that COPD management should be based on clinical symptoms and health status and should consider the heterogeneity of patients' phenotypes and treatable traits.

The weight of COPD comorbidities in individual patients' trajectories

Observational studies suggest that up to 90% of COPD patients have at least one associated morbidity, and that up to half have three or more chronic comorbidities. The mean number of comorbidities is around four and increases with age throughout the patient's trajectory.

COPD management cycle: from guidelines to practical issues

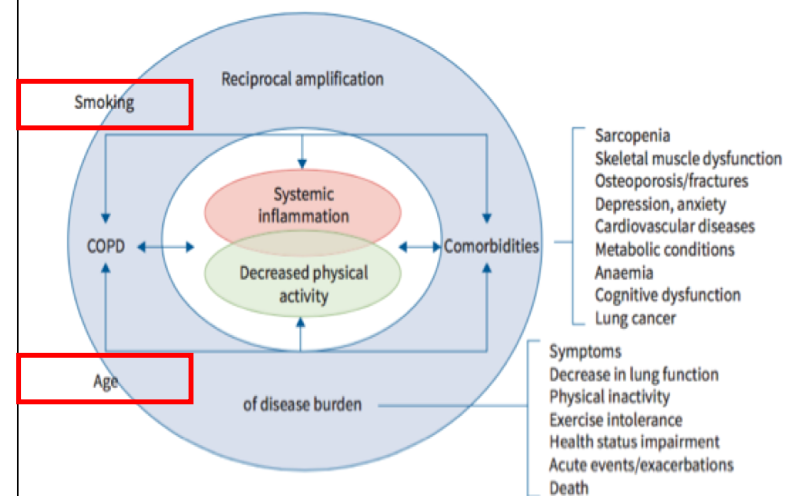


FIGURE 1 The complex interplay between chronic obstructive pulmonary disease (COPD) and its comorbidities as determinants of disease burden throughout patients' trajectories.



breathe

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► Breathe (Sheff). 2020 Mar;16(1):190315. doi: [10.1183/20734735.0315-2019](https://doi.org/10.1183/20734735.0315-2019) [↗](#)

Screening for comorbidities in COPD

[Delphine Natali](#)^{1,✉}, [Georges Cloatre](#)², [Philippe Hovette](#)³, [Belinda Cochrane](#)⁴

Mechanisms for interactions between COPD and its associated comorbidities

The association between COPD and some comorbidities may be partly due to shared **risk factors** (*e.g.* age, tobacco smoke, sedentary lifestyle). However, there is increasing evidence of overlapping pathophysiology, including **low-grade systemic inflammation**, which contributes to coronary artery disease, osteoporosis, sarcopenia and possibly depression. Another example is **autonomic dysfunction** with excess sympathetic nervous system activity, which is recognised in COPD but may also be implicated in anxiety, cardiac failure or dysrhythmia.

How to screen for comorbidities in COPD

Screening is feasible if both a reliable diagnostic test and an effective treatment are available. In addition, the combined risks and expense of testing and treatment should be weighed against the **potential benefit of treatment** before proceeding. However, although screening is feasible for several comorbid diseases in COPD, there is **no consensus or guideline about an appropriate screening approach**. Moreover, COPD may complicate identification and diagnosis of comorbidities: symptoms of COPD and comorbid conditions may overlap, leaving the second condition unrecognised, or the presence of coexistent COPD may present challenges to diagnostic testing

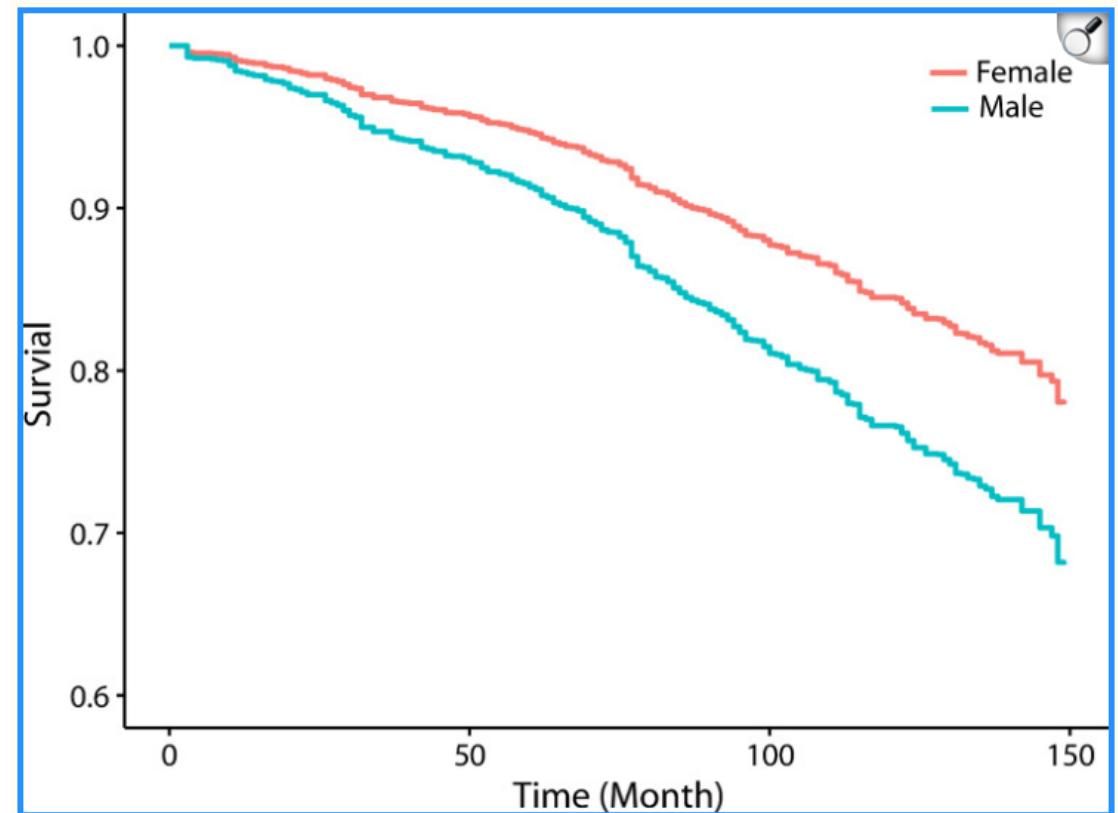
RESEARCH

Open Access

Sex differences in comorbidities and mortality risk among patients with chronic obstructive pulmonary disease: a study based on NHANES data

Na Li^{1†}, Xiaoli Li^{1†}, Minjie Liu^{1†}, Yakang Wang² and Junning Wang^{1*}

Patients with chronic obstructive pulmonary disease (COPD) commonly have **coexisting comorbidities** that contribute to higher **exacerbation** frequency, **poorer health** status, and increased all-cause **mortality**; however, there are **only a few studies available on the sex discrepancy** in the comorbidity distribution and outcomes among COPD patients, and there is limited information about the discrepancy in all-cause mortality between men and women.



[Open in a new tab](#)

Kaplan–Meier estimates for overall survival among patients with COPD between men and women. Adjusted for age, race/Hispanic ethnicity, BMI, smoking status, FEV1% predicted and prevalent comorbidities (including hypertension, congestive heart failure, coronary heart disease, angina pectoris, heart attack, stroke, dyslipidemia, diabetes, gout, asthma, arthritis, anemia, cancer or malignancy and sleep disorders)

Influence of sex on chronic obstructive pulmonary disease risk and treatment outcomes

Sex differences in comorbidities

Chronic obstructive pulmonary disease (COPD), one of the most common chronic diseases and a leading cause of death, has **historically been considered a disease of men**. However, there has been **a rapid increase** in the prevalence, morbidity, and mortality of COPD **in women** over the last two decades. This has largely been attributed to historical **increases in tobacco consumption among women**. But the influence of sex on COPD is complex and involves **several other factors, including differential susceptibility to the effects of tobacco, anatomic, hormonal, and behavioral differences, and differential response to therapy**. Interestingly, **nonsmokers with COPD are more likely to be women**. In addition, women with COPD are more likely to have a **chronic bronchitis phenotype**, suffer from **less cardiovascular comorbidity**, have **more concomitant depression and osteoporosis**, and have a **better outcome with acute exacerbations**. Women historically have had lower mortality with COPD, but this is changing as well. There are also **differences in how men and women respond to different therapies**. Despite the changing face of COPD, care providers continue to harbor a **sex bias, leading to underdiagnosis** and delayed diagnosis of COPD in women.

EDITORIALS

Sex Differences in Chronic Obstructive Pulmonary Disease Mechanisms

Peter J. Barnes, D.M. Am J Respir Crit Care Med Vol 193, Iss 8, pp 813–824, Apr 15, 2016

❖ The **histological pattern of COPD differs in women** with less emphysema and more small airway disease than in men, at least in severe disease.

❖ The **greater prevalence of emphysema in men** compared with women is confirmed by computerized tomography

❖ COPD associated with indoor **air pollution shows more small airway disease** than emphysema compared with that seen cigarette smokers, which may reflect the predominance of women with this risk factor

❖ **The reasons** for the greater susceptibility of women airway disease predominance **are largely unknown**. The relatively smaller than those of males for the same lung greater concentration of tobacco smoke per unit area

❖ Metabolism of cigarette smoke may differ in women the expression and activity of cytochrome P450 enzyme

❖ It is possible that the inflammatory response to cigarette smoke is different in females because of **hormonal effects**

❖ Female animals developed more small airway remodeling and peripheral airway obstruction than male animals, who developed predominant emphysema, but **ovariectomy produced the same pattern as in male mice**, indicating that female sex hormones were responsible for these differences

❖ Furthermore, **the estrogen receptor- α (ER α) blocker tamoxifen mimicked the effects of ovariectomy**, indicating that estrogen accounts for these sex differences in response to chronic smoking.

Chronic obstructive pulmonary disease

Gender differences in survival following hospitalisation for COPD

Anne V Gonzalez,¹ Samy Suissa,² Pierre Ernst^{2,3}

Thorax 2011;66:38-42

We assessed **comorbidities** using prescriptions for medications used in the treatment of the various disorders of interest dispensed in the year before cohort entry. **More women than men** were dispensed **cardiovascular medications** in the year before hospitalisation for COPD, while the proportion of men and women dispensed medications for diabetes was similar. **More women** were treated for **osteoporosis**. Interestingly, **more women than men** were dispensed **benzodiazepines and antidepressants drugs** in the year preceding the index hospitalisation. Previous studies have reported a higher prevalence of **anxiety and depression** among women with COPD, and anxiety has been shown to contribute to the **risk of repeat hospitalisation** in patients with COPD.

RESEARCH ARTICLE

Open Access

Association between chronic obstructive pulmonary disease and gastroesophageal reflux disease: a national cross-sectional cohort study

The prevalence of GERD in patients with COPD was high. **Old age, female gender**, medical aid insurance type, and many COPD medications except inhaled muscarinic antagonists were associated with GERD. The presence of GERD was associated with COPD exacerbation.

Conclusions: This prospective cohort study showed that GERD appears to be a predictive factor for hospitalization due to AECOPD and that severer GERD symptoms may be associated with more frequent AECOPD. Thus, further studies are warranted to evaluate the preventive effect of the therapy for GERD on AECOPD.



Clinical review

The impact of ethnicity on the prevalence and severity of obstructive sleep apnea

Khin Hnin^{a b}  , Sutapa Mukherjee^{a b}, Nick A. Antic^{a b †}, Peter Catchside^a,
Ching Li Chai-Coetzer^{a b}, Doug McEvoy^{a b}, Andrew Vakulin^{a c}

- Ethnic differences in OSA prevalence and severity has been derived from studies of relatively homogenous ethnic groups.
- Between-study comparisons are problematic given differing methodologies.
- Recent large inter-ethnic studies support the notion that Chinese have an increased OSA prevalence and severity compared to those of European descent.
- Some data suggest that Hispanic/Mexican Americans also show higher rates of OSA,
- OSA prevalence in African Americans is not dissimilar to that of populations of European ancestry. Anatomical traits underlying differences in OSA prevalence and severity between ethnic groups: obesity appears to be the most important.
- The effect of ethnicity on non-anatomical factors (i.e., upper airway muscle responsiveness, arousal threshold, and loop gain) responsible for OSA severity is currently unknown

Do females behave differently in COPD exacerbation?

Hatice Kilic¹
Nurdan Kokturk²
Gulcin Sari³
Mustafa Cakir⁴

Female COPD patients might be more prone to have severe exacerbations, a higher number of hospitalizations, and prolonged length of stay for hospitalization. They have a different comorbidity profile and might be undertreated for COPD.

Mortality from COVID-19 in Patients with COPD: A US Study in the N3C Data Enclave

Daniel Meza
Basil Khuder
Joseph I Bailey
Sharon R Rosenberg
Ravi Kalhan
Paul A Reyfman 

Table 1 Characteristics of Patients with COVID-19 (PCR Positive) in the N3C Data Enclave

	COPD (n = 7449)	NO COPD (n = 273,963)	p-value
Age, mean (years)	70.5	57.9	
Gender			
Female, No. (%)	3500 (47%)	147,639 (54%)	< 0.001
Race			< 0.001
Black, No. (%)	1412 (19%)	47,046 (17%)	
White, No. (%)	5310 (71%)	174,487 (64%)	
Asian, No. (%)	93 (1%)	6765 (2%)	
Hispanic, No. (%)	294 (4%)	32,331 (12%)	< 0.001
Comorbidities			
Diabetes, No. (%)	2849 (38%)	59,459 (22%)	< 0.001
Obesity, No. (%)	2539 (34%)	64,591 (24%)	< 0.001
CKD, No. (%)	2328 (31%)	28,195 (10%)	< 0.001
HTN, No. (%)	5541 (74%)	108,105 (39%)	< 0.001
Hospitalizations, n (%)	4631 (62%)	76,875 (28%)	< 0.001
Deaths, n (%)	1107 (15%)	10,126 (4%)	< 0.001

Mortality rate

patients with COPD: 15%
patients without COPD: 4%

Comorbidità per genere nei pazienti deceduti COVID 19

Patologie	Donne		Uomini	
	N	%	N	%
→ Cardiopatia ischemica	137	20.8	425	30.8
Fibrillazione atriale	157	23.8	293	21.2
Scompenso cardiaco	129	18.9	199	14.1
Ictus	70	10.6	158	11.4
→ Ipertensione arteriosa	474	71.9	936	67.7
Diabete mellito-Tipo 2	205	31.1	442	32.0
Demenza	137	20.8	170	12.3
→ BPCO (BroncoPneumopatia Cronica Ostruttiva)	83	12.6	267	19.3
Cancro attivo negli ultimi 5 anni	105	15.9	223	16.1
Epatopatia cronica	18	2.7	63	4.6
Insufficienza renale cronica	122	18.5	309	22.4
Dialisi	14	2.1	29	2.1
→ Insufficienza respiratoria	33	5.0	77	5.6
Infezione da HIV	0	0.0	5	0.4
Malattie autoimmuni	40	6.1	36	2.6
Obesità	91	13.8	158	11.4
Numero di patologie				
0 patologie	13	2.0	61	4.4
1 patologia	89	13.5	205	14.8
2 patologie	145	22.0	286	20.7
3 o più patologie	412	62.5	830	60.1

Mortalità è correlata a età , comorbidità e genere maschile

► Chest. 2015 Feb 12;148(1):138–150. doi: [10.1378/chest.14-2434](https://doi.org/10.1378/chest.14-2434) [↗](#)

Economic Burden of COPD in the Presence of Comorbidities

[David M Mannino](#)^{1,✉}, [Keiko Higuchi](#)¹, [Tzy-Chyi Yu](#)¹, [Huanxue Zhou](#)¹, [Yangyang Li](#)¹, [Haijun Tian](#)¹, [Kangho Suh](#)¹

The morbidity and mortality associated with COPD exacts a **considerable economic burden**.

Comorbidities in COPD are associated with **poor health outcomes and increased costs**.



Broncopneumopatia cronica ostruttiva (BPCO)

Global Initiative for
Chronic Obstructive
Lung Disease

2024
REPORT



Global Strategy for the Diagnosis, Management, and
Prevention of Chronic Obstructive Pulmonary Disease

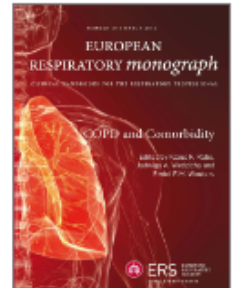
Condizioni socio-economiche

- Condizioni socio-economiche: povertà
- Unione Europea: costi diretti totali delle malattie respiratorie=6% del bilancio sanitario annuale totale. BPCO=56% (38,6 miliardi di euro) del costo delle malattie respiratorie.
- Stati Uniti: i costi della BPCO (costi previsti di 800,90 miliardi di dollari) aumenteranno nei prossimi 20 anni di circa 40 miliardi di dollari all'anno
- Le **donne** sostengono costi diretti più elevati rispetto agli uomini e perdono più anni di vita anche in termini di qualità.
- Le **riacutizzazioni della BPCO rappresentano la quota maggiore dell'onere totale** sul sistema sanitario.
- Relazione diretta tra **gravità della BPCO e costo delle cure**, che cambia in relazione al livello della malattia.
- I costi di ospedalizzazione e di ossigenoterapia ambulatoriale sono proporzionali al livello di gravità della BPCO.

Comorbidities in current COPD guidelines

Per Sigvald Bakke

Page: 217-222 DOI: <https://doi.org/10.1183/1025448x.10012612>



Summary

Altogether, nine international guidelines on the management of COPD published between 2004 and 2012 were reviewed for their focus on comorbidities. The guidelines differed greatly in their coverage of comorbidities. This related to the number of times the topic was mentioned, in what aspects of COPD management comorbidity were addressed, what type of comorbidities were considered and, finally, what was actually stated about the various comorbidities. **There was no time trend in the quantitative and qualitative content of comorbidities in the guidelines. The guideline with the highest coverage of comorbidities was that of the Global Initiative for Chronic Obstructive Lung Disease (GOLD).** The increasing knowledge of the significance of comorbidities in COPD is likely to be reflected in an enhanced focus on this aspect in future COPD guidelines.

Broncopneumopatia cronica ostruttiva (BPCO)

Global Initiative for
Chronic Obstructive
Lung Disease

2024
REPORT



Global Strategy for the Diagnosis, Management, and
Prevention of Chronic Obstructive Pulmonary Disease

Comorbidità

1. COPD often coexists with other diseases (comorbidities) that may have a significant impact on prognosis.
2. Some of these arise independently of COPD whereas others may be causally related, either with shared risk factors or by one disease increasing the risk or compounding the severity of the other.
3. The risk of comorbid disease can be increased by the sequelae of COPD e.g., **reduced physical activity or continued smoking**.
4. Whether or not COPD and comorbid diseases are related, management of the COPD patient must include identification and treatment of its comorbidities.
5. **Comorbidities are common at any severity of COPD** and the differential diagnosis can often be difficult.
6. Although COPD is negatively impacted by multiple comorbid diseases, COPD itself is one of the most important comorbid conditions that adversely affects **the outcomes of other disorders**.

COPD Course and Comorbidities: Are There Gender Differences?

Marcin Grabicki ¹, Barbara Kuźnar-Kamińska ², Renata Rubinsztajn ³, Beata Brajer-Luftmann ²,
Monika Kosacka ⁴, Agata Nowicka ², Tomasz Piorunek ², Magdalena Kostrzevska ²,
Ryszarda Chazan ³, Halina Batura-Gabryel ²

Clinical presentation, comorbidities and prognosis may differ between genders and may influence management decisions.

Women showed fewer comorbidities, on average, per patient (5.4 vs. 6.4, $p = 0.002$), but had a higher prevalence of at least seven comorbidities per patient (48.7% of women vs. 33.0% of men, $p < 0.05$). Women also had a significantly worse prognosis (4.6 vs. 3.1 BODE score, $p < 0.05$) that correlated with the number of comorbidities ($r = 0.33$, $p < 0.01$)

The gender difference may indicate a need for a targeted assessment and management of COPD in women and men.

Chest. 2021 Jul; 160(1): 104–113.

Published online 2021 Mar 18. doi: [10.1016/j.chest.2021.03.024](https://doi.org/10.1016/j.chest.2021.03.024)

Sex and Gender Omic Biomarkers in Men and Women With COPD

Considerations for Precision Medicine

[Dawn L. DeMeo, MD, MPH*](#)

Sex and gender differences in lung health and disease are imperative to consider and study if **precision pulmonary medicine** is to be achieved. The development of reliable **COPD biomarkers** has been elusive, and the translation of biomarkers to clinical care has been limited. Useful and effective biomarkers must be developed with attention to **clinical heterogeneity of COPD**; inherent heterogeneity exists related to grouping women and men together in the studies of COPD. Considering sex and gender differences and influences related to -omics may represent progress in susceptibility, diagnostic, prognostic, and therapeutic biomarker development and clinical innovation to improve the lung health of men and women.

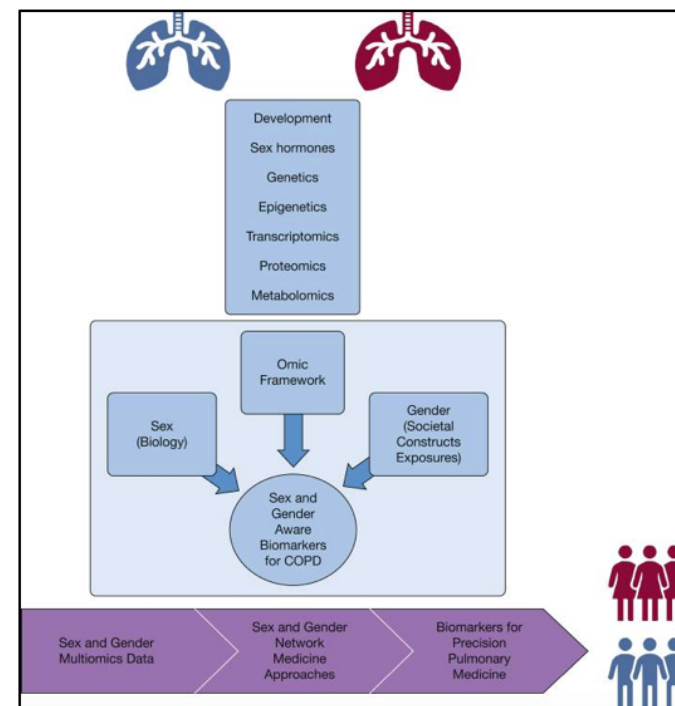


Diagram showing elements to construct a sex- and gender-specific approach to advance precision pulmonary medicine



GISeG

Gruppo Italiano Salute e Genere

Grazie!

