

Appendix

Table A1. Medline Search Strategy.

1	exp Pulmonary Disease, Chronic Obstructive/	(51369)
2	(obstruct\$ adj3 (pulmonary or lung\$ or airway\$ or airflow\$ or bronch\$ or respirat\$)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(110202)
3	emphysema.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(33167)
4	(copd or coad or cobd).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(42175)
5	(chronic adj3 bronchitis).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(11093)
6	1 or 2 or 3 or 4 or 5	(147446)
7	exp Dietary Supplements/	(68218)
8	exp Nutritional Support/	(43349)
9	((diet\$ or food or nutrition\$ or herbal) adj3 (supplement\$ or support\$ or enhance\$)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(110391)
10	7 or 8 or 9	(158546)
11	exp Rehabilitation/	(285709)
12	rehab\$.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(304313)
13	11 or 12	(497231)
14	6 and 10 and 13	(140)

Table A2. Embase Search Strategy.

1 exp chronic obstructive lung disease/	(51369)
2 exp emphysema/	(14325)
3 exp chronic bronchitis/	(1712)
4 (obstruct\$ adj3 (pulmonary or lung\$ or airway\$ or airflow\$ or bronch\$ or respirat\$)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	(110202)
5 emphysema.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	(33167)
6 (copd or coad or cobd).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	(42175)
7 (chronic adj3 bronchitis).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	(11093)
8- 1 or 2 or 3 or 4 or 5 or 6 or 7	(149229)
9 exp diet supplementation/	(0)
10 exp nutritional support/	(43349)
11 ((diet\$ or food or nutrition\$ or herbal) adj3 (supplement\$ or support\$ or enhance\$)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	(110391)
12 9 or 10 or 11	(142817)
13 exp rehabilitation/	(285709)
14 rehab\$.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	(304313)
15- 13 or 14	(497231)
16- 8 and 12 and 15	(140)

Table A3. Allied and Complementary Medicine Database Search Strategy.

1	exp Pulmonary Disease, Chronic Obstructive/	(48121)
2	(obstruct\$ adj3 (pulmonary or lung\$ or airway\$ or airflow\$ or bronch\$ or respirat\$)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(104520)
3	emphysema.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(32308)
4	(copd or coad or cobd).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(38816)
5	(chronic adj3 bronchitis).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(10902)
6	1 or 2 or 3 or 4 or 5	(141003)
7	exp Dietary Supplements/	(61794)
8	exp Nutritional Support/	(42221)
9	((diet\$ or food or nutrition\$ or herbal) adj3 (supplement\$ or support\$ or enhance\$)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(102371)
10	7 or 8 or 9	(148194)
11	exp Rehabilitation/	(272399)
12	rehab\$.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(170043)
13	11 or 12	(380519)
14	6 and 10 and 13	(125)
15	pulmonary disease chronic obstructive/ or bronchitis/ or pulmonary emphysema/ or lung diseases obstructive/	(80818)
16	(obstruct\$ adj3 (pulmonary or lung\$ or airway\$ or airflow\$ or bronch\$ or respirat\$)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(104520)
17	emphysema.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(32308)
18	(copd or coad or cobd).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(38816)
19	(chronic adj3 bronchitis).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(10902)
20	15 or 16 or 17 or 18 or 19	(151650)
21	dietary supplements/	(46793)

22	((diet\$ or food or nutrition\$ or herbal) adj3 (supplement\$ or support\$ or enhance\$)).mp. mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(102371)
23	21 or 22	(102371)
24	exp rehabilitation/	(272399)
25	rehab\$.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	(170043)
26	24 or 25	(380519)
27	20 and 23 and 26	(120)

Table A4. CINHAL

S1	(MH "Pulmonary Disease, Chronic Obstructive+")
S2	(MH "Emphysema+")
S3	obstruc* N3 (pulmonary OR lung* OR airway* OR airflow* OR bronch* OR respirat*)
S4	emphysema
S5	COPD OR COAD OR COBD
S6	chronic N3 bronchitis
S7	S1 OR S2 OR S3 OR S4 OR S5 OR S6
S8	(MH "Nutritional Support+")
S9	(diet* OR food OR nutrition* OR herbal) N3 (supplement* OR support* OR enhance*)
S10	S8 OR S9
S11	(MH "Rehabilitation+")
S12	rehab*
S13	S11 OR S12
S14	S7 AND S10 AND S13

Table A5. Web of Science

# 1	TOPIC: (obstruct* NEAR/3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*))	(93750)
# 2	TOPIC: (obstruct* NEAR/3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*)) OR TOPIC: (emphysema) OR TOPIC: (chronic NEAR/3 bronchitis) OR TOPIC: (COPD OR COAD OR COBD)	(135223)
# 3	TOPIC: (obstruct* NEAR/3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*)) OR TOPIC: (emphysema) OR TOPIC: (chronic NEAR/3 bronchitis) OR TOPIC: (COPD OR COAD OR COBD) AND TOPIC: ((diet* or food or nutrition* or herbal) NEAR/3 (supplement* or support* or enhance*))	(114803)
# 4	TOPIC: (obstruct* NEAR/3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*)) OR TOPIC: (emphysema OR (chronic NEAR/3 bronchitis) OR (COPD OR COAD OR COBD))	(135223)
# 5	TOPIC: ((obstruct* NEAR/3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*)) OR emphysema OR (chronic NEAR/3 bronchitis) OR (COPD OR COAD OR COBD))	(135223)
# 6	TOPIC: ((obstruct* NEAR/3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*)) OR emphysema OR (chronic NEAR/3 bronchitis) OR (COPD OR COAD OR COBD)) AND TOPIC: ((diet* or food or nutrition* or herbal) NEAR/3 (supplement* or support* or enhance*))	(491)
# 7	TOPIC: ((obstruct* NEAR/3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*)) OR emphysema OR (chronic NEAR/3 bronchitis) OR (COPD OR COAD OR COBD)) AND TOPIC: ((diet* or food or nutrition* or herbal) NEAR/3 (supplement* or support* or enhance*)) AND TOPIC:(rehab*)	(102)
# 8	TOPIC: ((obstruct* NEAR/3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*)) OR emphysema OR (chronic NEAR/3 bronchitis) OR (COPD OR COAD OR COBD)) AND TOPIC: ((diet* or food or nutrition* or herbal) NEAR/3 (supplement* or support* or enhance*)) AND TOPIC:(rehab*)	(102)
# 9	TS=(obstruct* NEAR/3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*))	(93750)
# 10	TS=(emphysema)	(22729)
# 11	TS=(COPD OR COAD OR COBD)	(57609)
# 12	TS=(chronic NEAR/3 bronchitis)	(9926)
# 13	#12 OR #11 OR #10 OR #9	(135223)
# 14	TS=((diet* or food or nutrition* or herbal) NEAR/3	(103028)
# 15	TS=(rehab*)	(205904)
# 16	#15 AND #14 AND #13	(102)

Table A6. Excluded Studies

First Author	Study Title	Reason
Schols, 1998	Weight Loss is a Reversible Factor in the Prognosis of COPD	The study was designed to answer different research questions
Curtis, K, 2015	Acute Dietary Nitrate Supplementation and Exercise Performance in COPD: A Double-Blind, Placebo-Controlled, Randomised Controlled Pilot Study.	Participants were not in Pulmonary rehabilitation
Pison, C, 2011	Multimodal Nutritional rehabilitation improves clinical outcomes of malnourished patients with chronic respiratory failure: a randomized controlled trial.	Population were not only COPD
Slinde, F, 2001	Individual dietary Intervention in patients With COPD during Multidisciplinary rehabilitation.	No nutritional supplement
Marinari, S, 2013	Effects of nutraceutical diet integration, with coenzyme Q10 (Q-Ter multicomposite) and creatine, on dyspnea, exercise tolerance, and quality of life in COPD patients with chronic respiratory failure.	Participants were not in Pulmonary rehabilitation
Candemir, I, 2017	Oral nutritional support in patients with COPD who completed the pulmonary rehabilitation program; Six months and one-year follow-ups	Table are not in English
Olveira, G, 2015	Oral supplement enriched in HMB combined with pulmonary rehabilitation improves body composition and health related quality of life in patients with bronchiectasis (Prospective, Randomised Study)	Participants were not COPD
Beer M, 2019	Clinical outcome and cost-effectiveness of a 1-year nutritional intervention programme in COPD patients with low muscle mass: The randomized controlled NUTRAIN trial	Duplicated to an original study included already.
Constantin D, 2013	Skeletal muscle molecular responses to resistance training and dietary supplementation in COPD	Participants were not in Pulmonary rehabilitation.
Ogasawara T, 2018	Effect of eicosapentaenoic acid on prevention of lean body mass depletion in patients with exacerbation of chronic obstructive pulmonary disease: A prospective randomized controlled trial	Participants were at hospital.

Table A7. Risk of bias of the included cohort study

First Author	Random Sequence generation	Allocation concealment	Selective reporting	Blinding subject+ personnel	Blinding outcome assessment	incomplete outcome data)	Other source of bias	OVERALL (0-7, higher score = higher risk of bias)
Bool, 2017	Low	Low	Low	Low	Low	Low	Unclear	1
Sugawara, 2012	Low	Low	Low	Low	Low	Low	Unclear	1
Paulin, 2016	Low	Unclear	Low	Low	Low	Low	Low	1
Faager, 2006	Low	Unclear	Low	Low	Low	Low	Low	1
Laviolette, 2010	Low	Unclear	Low	Low	Low	Low	Unclear	2
Borgh-Silva, 2006	Low	Low	Low	Low	High	Low	Low	1
Gurgun, 2013	Low	Low	Low	High	Unclear	Low	Low	2
Beers, 2019	Low	Unclear	Low	Low	Low	Low	Unclear	2
Deacon, 2008	Low	High	Low	Low	Low	Low	Unclear	2
Vermeeren, 2000	High	Unclear	Low	Low	Low	Low	Unclear	3
Baldi, 2010.	Low	Unclear	Low	High	High	Low	Low	3
Fuld, 2005	Low	Unclear	Low	Low	Low	High	High(design)	3
Wetering, 2009	Low	Low	Low	High	Low	High	Unclear	3
Broekhuizen, 2005	Low	High	High	Low	Low	Low	Unclear	3
Steiner, 2003	Low	High	Low	Low	Low	High(drop rate)	Unclear	3
Schols, 1995	Low	Unclear	Low	High	High	Low	unclear	4
Hornikx, 2012	High	High	Low	Low	Low	Low	High	3
Ogasawara, 2018	Low	Low	High	High	High	Low	Unclear	4
Ahnfeldt, 2015	Low	Low	Low	High	High	High	Unclear	4

Table A8. Risk of bias of the included cohort study

First author	Population representative	Sample size adequate	Confounders	Statistical analysis	Missing data	Methodology of the outcome	Objective assessment	OVERALL (0-3, higher score = lower risk of bias)
Creutzberg, 2000	3	0	2	3	3	3	3	2.4
Broekhuizen, 2005	3	2	0	3	3	3	2	2.3
Creutzberg, 2003	3	2	0	3	3	3	3	2.4
Menier, 2001	3	2	0	0	3	1	3	1.7
Kubo, 2006	3	0	0	0	3	0	2	1.1

0 = definitely no (high risk of bias); 1 = mostly no; 2 = Mostly yes; 3 = definitely yes (low risk of bias)