Supplementary Appendix:
Title: Computed Tomography-Based Body Composition Measures in COPD and their Association with Clinical Outcomes: A Systematic Review

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Table 1S: Database search strategies used for Ovid MEDLINE:

Terms that were synonymous for chronic respiratory disease were combined with OR (lines 2 through 119). Lines 122-129 constitute CT terms, all combined with OR. Lines 133-176 constitute body composition, all terms combined with OR. These three sets were combined with each other using AND. Then limits were applied for English language, humans and adult populations.

Ovid MEDLINE(R) <1946 to September 9, 2021>
Search history sorted by search number ascending

Number	Searches
1 **Chronic Respiratory Disease (2 to 119)**	[chronic respiratory disease incl lung transplantation]
2	Lung Diseases/
3	exp Lung Transplantation/
4	(chronic adj3 lung disease*).mp,kw.
5	(chronic adj3 respiratory disease*).mp,kw.
6	(chronic adj3 pulmonary disease*).mp,kw.
7	(chronic adj2 pneumopath*).mp,kw.
8	(lung* adj2 transplant*).mp,kw.
9	(lung* adj2 graft*).mp,kw.
10	(pulmonary adj2 transplant*).mp,kw.
11	(pulmonary adj2 graft*).mp,kw.
12	alpha 1-Antitrypsin Deficiency/
13	(alpha 1-Antitrypsin adj2 deficien*).mp,kw.
14	exp Asthma/
15	asthma*.mp,kw.
16	exp Bronchitis/
17	bronchiti*.mp,kw.
18	bronchiolitis.mp,kw.
19	(bronchiole adj2 disorder*).mp,kw.
20	(small airway* adj2 disease*).mp,kw.
21	exp Lung Diseases, Obstructive/
22	copd.mp,kw.
23	(obstructive adj2 lung).mp,kw.
24	(obstructive adj2 pulmonary).mp,kw.
25	(obstructive adj2 respiratory).mp,kw.
26	(chronic adj3 airflow obstruction*).mp,kw.
27	(chronic adj3 airway disease*).mp,kw.
28	coad.mp,kw.
29	Granulomatous Disease, Chronic/
30	granulomatous disease*.mp,kw.

31	(bulbous adj2 emphysema*).mp,kw.
32	(bullous adj2 emphysema*).mp,kw.
33	(emphysema* adj3 centrilobular).mp,kw.
34	(centriacinar adj3 emphysema*).mp,kw.
35	(emphysema* adj3 focal).mp,kw.
36	(emphysema* adj3 interstitial).mp,kw.
37	(emphysema* adj3 panacinar).mp,kw.
38	(emphysema* adj3 pulmonary).mp,kw.
39	(emphysema* adj3 lung*).mp,kw.
40	(emphysema* adj3 respiratory).mp,kw.
41	(lobular adj3 emphysema*).mp,kw.
42	(panlobular adj3 emphysema*).mp,kw.
43	Cystic Fibrosis/
44	cystic fibrosis.mp,kw.
45	(pulmonary adj3 fibrosis).mp,kw.
46	(pulmonary adj3 fibrocystic disease*).mp,kw.
47	mucoviscidosis.mp,kw.
48	mucoviscoidosis.mp,kw.
49	exp Lung Diseases, Interstitial/
50	(interstitial* adj2 lung*).mp,kw.
51	(interstitial* adj2 pneumoni*).mp,kw.
52	(interstitial* adj2 pneumopath*).mp,kw.
53	(autoimmune adj2 lung disease*).mp,kw.
54	(auto-immune adj2 lung disease*).mp,kw.
55	diffuse parenchymal lung*.mp,kw.
56	(alveolit* adj2 fibros*).mp,kw.
57	(fibrocystic adj2 pulmonary adj2 dysplasia*).mp,kw.
58	(crytogenic adj2 pneumoni*).mp,kw.
59	allergic alveolit*.mp,kw.
60	(hypersensitivity adj1 pneumoni*).mp,kw.
61	exp Respiratory Hypersensitivity/
62	(respiratory adj2 hypersensitiv*).mp,kw.
63	(airway* adj2 hyperresponsive*).mp,kw.
64	(airway* adj2 hyper-responsive*).mp,kw.
65	(goodpasture* adj2 syndrome*).mp,kw.
66	(goodpasture* adj2 disease*).mp,kw.
67	(pneumorenal adj2 syndrome*).mp,kw.
68	(pneumo-renal adj2 syndrome*).mp,kw.
69	anti-gbm disease*.mp,kw.
70	anti-glomerular basement membrane disease*.mp,kw.
71	(Lung Purpura adj2 Nephritis).mp,kw.
72	(Granulomatosis adj2 Polyangiiti*).mp,kw.
73	Wegener* Granulomatosis.mp,kw.
74	(Langerhan*-cell adj2 histiocytosis).mp,kw.
75	histiocytosis-x.mp,kw.
76	(histiocytos* adj2 langerhan*).mp,kw.
77	(generalized adj1 histiocytos*).mp,kw.

78	(reticuloendothelios* adj1 non-lipid).mp,kw.
79	(reticuloendothelios* adj2 aleukemic).mp,kw.
80	letterer-siwe disease*.mp,kw.
81	schueller christian.mp,kw.
82	schuller-christian.mp,kw.
83	(langerhan* adj2 granulomatos*).mp,kw.
84	hashimoto-pritzger.mp,kw.
85	Eosinophilic Granuloma*.mp,kw.
86	Pneumoconios*.mp,kw.
87	Bagassosis.mp,kw.
88	exp Pneumoconiosis/
89	Pneumoconios*.mp,kw.
90	pneumonoconios*.mp,kw.
91	pneumokonios*.mp,kw.
92	pneumonokonios*.mp,kw.
93	(lung* adj2 coniosis).mp,kw.
94	silicoarthritis.mp,kw.
95	(Caplan? adj2 syndrome*).mp,kw.
96	(Caplan? adj2 disease*).mp,kw.
97	exp Hypertension, Pulmonary/
98	(Pulmonary adj2 Hypertension).mp,kw.
99	(pulmonary adj2 hypertensive).mp,kw.
100	(lung* adj2 hypertension).mp,kw.
101	Pulmonary Veno-Occlusive Disease/
102	(Pulmonary adj2 Veno-Occlusive disease*).mp,kw.
103	(Pulmonary adj2 Venoocclusive Disease*).mp,kw.
104	(pulmonary adj2 vascular disease*).mp,kw.
105	(pulmonary adj2 artery disease*).mp,kw.
106	(pulmonary adj2 vascular disorder*).mp,kw.
107	(pulmonary adj2 vasculopath*).mp,kw.
108	(vascular adj2 lung disease*).mp,kw.
109	(occupational adj2 lung disease*).mp,kw.
110	exp bronchiectasis/
111	Bronchiectas*.mp,kw.
112	ciliary dyskinesia*.mp,kw.
113	ciliostasis.mp,kw.
114	exp Ciliary Motility Disorders/
115	(ciliary adj2 immotility).mp,kw.
116	(ciliary adj2 motility disorder*).mp,kw.
117	(Kartagener* adj2 syndrome*).mp,kw.
118	(Kartagener* adj2 triad*).mp,kw.
119	(siewert adj2 syndrome*).mp,kw.
120	or/2-119
121 **CT Based Terms (122-129)**	[CT/computed tomography]
122	(cat adj2 scan*).mp,kw.
123	exp Tomography, X-Ray Computed/

124	(comput* adj2 tomograph*).mp,kw.
125	CT.ti,ab,kw.
126	tomodensitometr*.mp,kw.
127	(electron adj2 tomograph*).mp,kw.
128	exp thorax/dg
129	cross-sectional area*.mp,kw.
130	or/122-129
131	120 and 130
132 **Body Composition (lines 133 -176)**	[body composition]
133	exp Body Composition/
134	exp "Body Weights and Measures"/
135	exp Muscle, Skeletal/
136	exp Adipose Tissue/
137	exp Muscular Atrophy/
138	Muscle Strength/
139	Muscle Weakness/
140	fat.mp,kw.
141	muscle*.tw,kw.
142	muscular*.tw,kw.
143	(adipose adj3 tissue*).mp,kw.
144	adiposity.mp,kw.
145	sarcop?enia.mp,kw.
146	myop?enia.mp,kw.
147	body mass index.mp,kw.
148	BMI.mp,kw.
149	overweight.mp,kw.
150	over-weight.mp,kw.
151	obesity.mp,kw.
152	obese.mp,kw.
153	(body adj2 composition*).mp,kw.
154	(lean adj2 mass).mp,kw.
155	(analytic adj2 morphomic*).mp,kw.
156	(psoas adj2 area*).mp,kw.
157	rect* abdomini*.mp,kw.
158	transvers* abdomini*.mp,kw.
159	oblique*.mp,kw.
160	erector spina*.mp,kw.
161	quadratus lumborum.mp,kw.
162	intercostal*.mp,kw.
163	pectoralis.mp,kw.
164	serratus anterior.mp,kw.
165	latissim* dorsi.mp,kw.
166	(levator adj2 scapula*).mp,kw.
167	trapezius.mp,kw.
168	rhomboid*.mp,kw.
169	infraspinat*.mp,kw.
170	(rotator adj2 cuff?).mp,kw.

171	subscapulari*.mp,kw.
172	supraspinat*.mp,kw.
173	(teres adj2 major).mp,kw.
174	(teres adj2 minor).mp,kw.
175	(lean adj2 tissue).mp,kw.
176	Myosteatosis.mp,kw.
177	or/133-176
178	131 and 177
Limits Applied (English, Humans, and Adults)	
179	limit 178 to english language
180	animals/ not (animals/ and humans/)
181	179 not 180
182	limit 181 to ("all infant (birth to 23 months)" or "all child (0 to 18 years)")
183	limit 181 to "all adult (19 plus years)"
184	181 not 182
185	183 or 184
186	remove duplicates from 185

Table 2S: Database search strategies used for Ovid MEDLINE Epub Ahead of Print and In Process & Other Non-Indexed Citations:

Ovid MEDLINE(R) Epub Ahead of Print and In-Process & Other Non-Indexed Citations

#	Searches
1	(chronic adj3 lung disease*).mp,kw.
2	(chronic adj3 respiratory disease*).mp,kw.
3	(chronic adj3 pulmonary disease*).mp,kw.
4	(chronic adj2 pneumopath*).mp,kw.
5	(lung* adj2 transplant*).mp,kw.
6	(lung* adj2 graft*).mp,kw.
7	(pulmonary adj2 transplant*).mp,kw.
8	(pulmonary adj2 graft*).mp,kw.
9	(alpha 1-Antitrypsin adj2 deficien*).mp,kw.
10	asthma*.mp,kw.
11	bronchiti*.mp,kw.
12	bronchiolitis.mp,kw.
13	(bronchiole adj2 disorder*).mp,kw.
14	(small airway* adj2 disease*).mp,kw.
15	copd.mp,kw.
16	(obstructive adj2 lung).mp,kw.
17	(obstructive adj2 pulmonary).mp,kw.
18	(obstructive adj2 respiratory).mp,kw.
19	(chronic adj3 airflow obstruction*).mp,kw.
20	(chronic adj3 airway disease*).mp,kw.
21	coad.mp,kw.
22	granulomatous disease*.mp,kw.
23	(bulbous adj2 emphysema*).mp,kw.
24	(bullous adj2 emphysema*).mp,kw.
25	(emphysema* adj3 centrilobular).mp,kw.
26	(centriacinar adj3 emphysema*).mp,kw.
27	(emphysema* adj3 focal).mp,kw.
28	(emphysema* adj3 interstitial).mp,kw.
29	(emphysema* adj3 panacinar).mp,kw.
30	(emphysema* adj3 pulmonary).mp,kw.
31	(emphysema* adj3 lung*).mp,kw.
32	(emphysema* adj3 respiratory).mp,kw.
33	(lobular adj3 emphysema*).mp,kw.
34	(panlobular adj3 emphysema*).mp,kw.
35	cystic fibrosis.mp,kw.
36	(pulmonary adj3 fibrosis).mp,kw.

37 (pulmonary adj3 fibrocystic disease*).mp,kw.
38 mucoviscidosis.mp,kw.
39 mucoviscoidosis.mp,kw.
40 (interstitial* adj2 lung*).mp,kw.
41 (interstitial* adj2 pneumoni*).mp,kw.
42 (interstitial* adj2 pneumopath*).mp,kw.
43 (autoimmune adj2 lung disease*).mp,kw.
44 (auto-immune adj2 lung disease*).mp,kw.
45 diffuse parenchymal lung*.mp,kw.
46 (alveolit* adj2 fibros*).mp,kw.
47 (fibrocystic adj2 pulmonary adj2 dysplasia*).mp,kw.
48 (crytogenic adj2 pneumoni*).mp,kw.
49 allergic alveolit*.mp,kw.
50 (hypersensitivity adj1 pneumoni*).mp,kw.
51 (respiratory adj2 hypersensitiv*).mp,kw.
52 (airway* adj2 hyperresponsive*).mp,kw.
53 (airway* adj2 hyper-responsive*).mp,kw.
54 (goodpasture* adj2 syndrome*).mp,kw.
55 (goodpasture* adj2 disease*).mp,kw.
56 (pneumorenal adj2 syndrome*).mp,kw.
57 (pneumo-renal adj2 syndrome*).mp,kw.
58 anti-gbm disease*.mp,kw.
59 anti-glomerular basement membrane disease*.mp,kw.
60 (Lung Purpura adj2 Nephritis).mp,kw.
61 (Granulomatosis adj2 Polyangiiti*).mp,kw.
62 Wegener* Granulomatosis.mp,kw.
63 (Langerhan*-cell adj2 histiocytosis).mp,kw.
64 histiocytosis-x.mp,kw.
65 (histiocytos* adj2 langerhan*).mp,kw.
66 (generalized adj1 histiocytos*).mp,kw.
67 (reticuloendothelios* adj1 non-lipid).mp,kw.
68 (reticuloendothelios* adj2 aleukemic).mp,kw.
69 letterer-siwe disease*.mp,kw.
70 schueller christian.mp,kw.
71 schuller-christian.mp,kw.
72 (langerhan* adj2 granulomatos*).mp,kw.
73 hashimoto-pritzger.mp,kw.
74 Eosinophilic Granuloma*.mp,kw.
75 Pneumoconios*.mp,kw.
76 Bagassosis.mp,kw.
77 Pneumoconios*.mp,kw.
78 pneumonoconios*.mp,kw.
79 pneumokonios*.mp,kw.

80 pneumonokonios*.mp,kw.
81 (lung* adj2 coniosis).mp,kw.
82 silicoarthritis.mp,kw.
83 (Caplan? adj2 syndrome*).mp,kw.
84 (Caplan? adj2 disease*).mp,kw.
85 (Pulmonary adj2 Hypertension).mp,kw.
86 (pulmonary adj2 hypertensive).mp,kw.
87 (lung* adj2 hypertension).mp,kw.
88 (Pulmonary adj2 Veno-Occlusive disease*).mp,kw.
89 (Pulmonary adj2 Venoocclusive Disease*).mp,kw.
90 (pulmonary adj2 vascular disease*).mp,kw.
91 (pulmonary adj2 artery disease*).mp,kw.
92 (pulmonary adj2 vascular disorder*).mp,kw.
93 (pulmonary adj2 vasculopath*).mp,kw.
94 (vascular adj2 lung disease*).mp,kw.
95 (occupational adj2 lung disease*).mp,kw.
96 Bronchiectas*.mp,kw.
97 ciliary dyskinesia*.mp,kw.
98 ciliostasis.mp,kw.
99 (ciliary adj2 immotility).mp,kw.
100 (ciliary adj2 motility disorder*).mp,kw.
101 (Kartagener* adj2 syndrome*).mp,kw.
102 (Kartagener* adj2 triad*).mp,kw.
103 (siewert adj2 syndrome*).mp,kw.
104 or/1-103
105 (cat adj2 scan*).mp,kw.
106 (comput* adj2 tomograph*).mp,kw.
107 CT.ti,ab,kw.
108 tomodensitometr*.mp,kw.
109 (electron adj2 tomograph*).mp,kw.
110 cross-sectional area*.mp,kw.
111 or/105-110
112 fat.mp,kw.
113 muscle*.tw,kw.
114 muscular*.tw,kw.
115 (adipose adj3 tissue*).mp,kw.
116 adiposity.mp,kw.
117 sarcop?enia.mp,kw.
118 myop?enia.mp,kw.
119 body mass index.mp,kw.
120 BMI.mp,kw.
121 overweight.mp,kw.
122 over-weight.mp,kw.

123 obesity.mp,kw.
124 obese.mp,kw.
125 (body adj2 composition*).mp,kw.
126 (lean adj2 mass).mp,kw.
127 (analytic adj2 morphomic*).mp,kw.
128 (psoas adj2 area*).mp,kw.
129 rect* abdomini*.mp,kw.
130 transvers* abdomini*.mp,kw.
131 oblique*.mp,kw.
132 erector spina*.mp,kw.
133 quadratus lumborum.mp,kw.
134 intercostal*.mp,kw.
135 pectoralis.mp,kw.
136 serratus anterior.mp,kw.
137 latissim* dorsi.mp,kw.
138 (levator adj2 scapula*).mp,kw.
139 trapezius.mp,kw.
140 rhomboid*.mp,kw.
141 infraspinat*.mp,kw.
142 (rotator adj2 cuff?).mp,kw.
143 subscapulari*.mp,kw.
144 supraspinat*.mp,kw.
145 (teres adj2 major).mp,kw.
146 (teres adj2 minor).mp,kw.
147 (lean adj2 tissue).mp,kw.
148 Myosteatosis.mp,kw.
149 or/112-148
150 104 and 111
151 149 and 150
152 limit 151 to english language

Table 3S: Search strategy used for Embase:

Embase <1974 to September 9, 2021>

#	Searches
1	lung disease/
2	chronic lung disease/
3	exp autoimmune lung disease/
4	exp bronchiolitis/
5	chronic granulomatous disease/
6	exp chronic obstructive lung disease/
7	ciliary dyskinesia/
8	exp interstitial lung disease/
9	exp lung alveolitis/
10	lung alveolus proteinosis/
11	exp lung emphysema/
12	exp lung fibrosis/
13	lung sarcoidosis/
14	exp occupational lung disease/
15	exp pulmonary vascular disease/
16	small airway disease/
17	exp asthma/
18	exp bronchitis/
19	cystic fibrosis/
20	alpha 1 antitrypsin deficiency/
21	exp bronchiectasis/
22	exp lung transplantation/
23	(chronic adj3 lung disease*).mp,kw.
24	(chronic adj3 respiratory disease*).mp,kw.
25	(chronic adj3 pulmonary disease*).mp,kw.
26	(chronic adj2 pneumopath*).mp,kw.
27	(lung* adj2 transplant*).mp,kw.
28	(pulmonary adj2 transplant*).mp,kw.
29	(lung* adj2 graft*).mp,kw.
30	(pulmonary adj2 graft*).mp,kw.
31	(alpha 1-Antitrypsin adj2 deficien*).mp,kw.
32	asthma*.mp,kw.
33	bronchiti*.mp,kw.
34	bronchiolitis.mp,kw.
35	(bronchiole adj2 disorder*).mp,kw.
36	(small airway* adj2 disease*).mp,kw.
37	copd.mp,kw.
38	(obstructive adj2 lung).mp,kw.

39 (obstructive adj2 pulmonary).mp,kw.
40 (obstructive adj2 respiratory).mp,kw.
41 (chronic adj3 airflow obstruction*).mp,kw.
42 (chronic adj3 airway disease*).mp,kw.
43 coad.mp,kw.
44 granulomatous disease*.mp,kw.
45 (bulbous adj2 emphysema*).mp,kw.
46 (bullous adj2 emphysema*).mp,kw.
47 (emphysema* adj3 centrilobular).mp,kw.
48 (centriacinar adj3 emphysema*).mp,kw.
49 (emphysema* adj3 focal).mp,kw.
50 (emphysema* adj3 interstitial).mp,kw.
51 (emphysema* adj3 panacinar).mp,kw.
52 (emphysema* adj3 pulmonary).mp,kw.
53 (emphysema* adj3 lung*).mp,kw.
54 (emphysema* adj3 respiratory).mp,kw.
55 (lobular adj3 emphysema*).mp,kw.
56 (panlobular adj3 emphysema*).mp,kw.
57 cystic fibrosis.mp,kw.
58 (pulmonary adj3 fibrosis).mp,kw.
59 (pulmonary adj3 fibrocystic disease*).mp,kw.
60 mucoviscidosis.mp,kw.
61 mucoviscoidosis.mp,kw.
62 (interstitial* adj2 lung*).mp,kw.
63 (interstitial* adj2 pneumoni*).mp,kw.
64 (interstitial* adj2 pneumopath*).mp,kw.
65 (autoimmune adj2 lung disease*).mp,kw.
66 (auto-immune adj2 lung disease*).mp,kw.
67 diffuse parenchymal lung*.mp,kw.
68 (alveolit* adj2 fibros*).mp,kw.
69 (fibrocystic adj2 pulmonary adj2 dysplasia*).mp,kw.
70 (crytogenic adj2 pneumoni*).mp,kw.
71 allergic alveolit*.mp,kw.
72 (hypersensitivity adj1 pneumoni*).mp,kw.
73 (respiratory adj2 hypersensitiv*).mp,kw.
74 (airway* adj2 hyperresponsive*).mp,kw.
75 (airway* adj2 hyper-responsive*).mp,kw.
76 (goodpasture* adj2 syndrome*).mp,kw.
77 (goodpasture* adj2 disease*).mp,kw.
78 (pneumorenal adj2 syndrome*).mp,kw.
79 (pneumo-renal adj2 syndrome*).mp,kw.
80 anti-gbm disease*.mp,kw.
81 anti-glomerular basement membrane disease*.mp,kw.

82 (Lung Purpura adj2 Nephritis).mp,kw.
83 (Granulomatosis adj2 Polyangiiti*).mp,kw.
84 Wegener* Granulomatosis.mp,kw.
85 (Langerhan*-cell adj2 histiocytosis).mp,kw.
86 histiocytosis-x.mp,kw.
87 (histiocytos* adj2 langerhan*).mp,kw.
88 (generalized adj1 histiocytos*).mp,kw.
89 (reticuloendothelios* adj1 non-lipid).mp,kw.
90 (reticuloendothelios* adj2 aleukemic).mp,kw.
91 letterer-siwe disease*.mp,kw.
92 schueller christian.mp,kw.
93 schuller-christian.mp,kw.
94 (langerhan* adj2 granulomatos*).mp,kw.
95 hashimoto-pritzger.mp,kw.
96 Eosinophilic Granuloma*.mp,kw.
97 Pneumoconios*.mp,kw.
98 Bagassosis.mp,kw.
99 Pneumoconios*.mp,kw.
100 pneumonoconios*.mp,kw.
101 pneumokonios*.mp,kw.
102 pneumonokonios*.mp,kw.
103 (lung* adj2 coniosis).mp,kw.
104 silicoarthritis.mp,kw.
105 (Caplan? adj2 syndrome*).mp,kw.
106 (Caplan? adj2 disease*).mp,kw.
107 (Pulmonary adj2 Hypertension).mp,kw.
108 (pulmonary adj2 hypertensive).mp,kw.
109 (lung* adj2 hypertension).mp,kw.
110 (Pulmonary adj2 Veno-Occlusive disease*).mp,kw.
111 (Pulmonary adj2 Venoocclusive Disease*).mp,kw.
112 (pulmonary adj2 vascular disease*).mp,kw.
113 (pulmonary adj2 artery disease*).mp,kw.
114 (pulmonary adj2 vascular disorder*).mp,kw.
115 (pulmonary adj2 vasculopath*).mp,kw.
116 (vascular adj2 lung disease*).mp,kw.
117 (occupational adj2 lung disease*).mp,kw.
118 Bronchiectas*.mp,kw.
119 ciliary dyskinesia*.mp,kw.
120 ciliostasis.mp,kw.
121 (ciliary adj2 immotility).mp,kw.
122 (ciliary adj2 motility disorder*).mp,kw.
123 (Kartagener* adj2 syndrome*).mp,kw.
124 (Kartagener* adj2 triad*).mp,kw.

125 (siewert adj2 syndrome*).mp,kw.
126 or/1-125
127 exp x-ray computed tomography/
128 (cat adj2 scan*).mp,kw.
129 (comput* adj2 tomograph*).mp,kw.
130 CT.ti,ab,kw.
131 tomodensitometr*.mp,kw.
132 (electron adj2 tomograph*).mp,kw.
133 cross-sectional area*.mp,kw.
134 or/127-133
135 126 and 134
136 exp body composition/
137 exp adipose tissue/
138 exp anthropometric parameters/
139 exp skeletal muscle/
140 exp muscle atrophy/
141 exp muscle weakness/
142 muscle strength/
143 muscle mass/
144 muscle thickness/
145 muscle mass/
146 exp obesity/
147 fat.mp,kw.
148 muscle*.tw,kw.
149 muscular*.tw,kw.
150 (adipose adj3 tissue*).mp,kw.
151 adiposity.mp,kw.
152 sarcop?enia.mp,kw.
153 myop?enia.mp,kw.
154 body mass index.mp,kw.
155 BMI.mp,kw.
156 overweight.mp,kw.
157 over-weight.mp,kw.
158 obesity.mp,kw.
159 obese.mp,kw.
160 (body adj2 composition*).mp,kw.
161 (lean adj2 mass).mp,kw.
162 (analytic adj2 morphomic*).mp,kw.
163 (psoas adj2 area*).mp,kw.
164 rect* abdomini*.mp,kw.
165 transvers* abdomini*.mp,kw.
166 oblique*.mp,kw.
167 erector spina*.mp,kw.

168	quadratus lumborum.mp,kw.
169	intercostal*.mp,kw.
170	pectoralis.mp,kw.
171	serratus anterior.mp,kw.
172	latissim* dorsi.mp,kw.
173	(levator adj2 scapula*).mp,kw.
174	trapezius.mp,kw.
175	rhomboid*.mp,kw.
176	infraspinat*.mp,kw.
177	(rotator adj2 cuff?).mp,kw.
178	subscapulari*.mp,kw.
179	supraspinat*.mp,kw.
180	(teres adj2 major).mp,kw.
181	(teres adj2 minor).mp,kw.
182	(lean adj2 tissue).mp,kw.
183	Myosteatosis.mp,kw.
184	or/136-183
185	135 and 184
186	limit 185 to english language
187	(exp animals/ or exp animal experimentation/ or nonhuman/) not ((exp animals/ or exp animal experimentation/ or nonhuman/) and exp human/)
188	186 not 187
189	limit 188 to (embryo <first trimester> or infant <to one year> or child <unspecified age> or preschool child <1 to 6 years> or school child <7 to 12 years> or adolescent <13 to 17 years>)
190	limit 188 to (adult <18 to 64 years> or aged <65+ years>)
191	188 not 189
192	190 or 191
193	limit 192 to (books or "book review" or conference abstract or conference paper or "conference review")
194	192 not 193
195	remove duplicates from 194

Table 4S: Search strategy used for Cochrane Databases:

Cochrane Database of Systematic Reviews <2005 to September 9, 2021>

#	Searches
1	(chronic adj3 lung disease*).mp,kw.
2	(chronic adj3 respiratory disease*).mp,kw.
3	(chronic adj3 pulmonary disease*).mp,kw.
4	(chronic adj2 pneumopath*).mp,kw.
5	(lung* adj2 transplant*).mp,kw.
6	(lung* adj2 graft*).mp,kw.
7	(pulmonary adj2 transplant*).mp,kw.
8	(pulmonary adj2 graft*).mp,kw.
9	(alpha 1-Antitrypsin adj2 deficien*).mp,kw.
10	asthma*.mp,kw.
11	bronchiti*.mp,kw.
12	bronchiolitis.mp,kw.
13	(bronchiole adj2 disorder*).mp,kw.
14	(small airway* adj2 disease*).mp,kw.
15	copd.mp,kw.
16	(obstructive adj2 lung).mp,kw.
17	(obstructive adj2 pulmonary).mp,kw.
18	(obstructive adj2 respiratory).mp,kw.
19	(chronic adj3 airflow obstruction*).mp,kw.
20	(chronic adj3 airway disease*).mp,kw.
21	coad.mp,kw.
22	granulomatous disease*.mp,kw.
23	(bulbous adj2 emphysema*).mp,kw.
24	(bullous adj2 emphysema*).mp,kw.
25	(emphysema* adj3 centrilobular).mp,kw.
26	(centriacinar adj3 emphysema*).mp,kw.
27	(emphysema* adj3 focal).mp,kw.
28	(emphysema* adj3 interstitial).mp,kw.
29	(emphysema* adj3 panacinar).mp,kw.
30	(emphysema* adj3 pulmonary).mp,kw.
31	(emphysema* adj3 lung*).mp,kw.
32	(emphysema* adj3 respiratory).mp,kw.
33	(lobular adj3 emphysema*).mp,kw.
34	(panlobular adj3 emphysema*).mp,kw.
35	cystic fibrosis.mp,kw.
36	(pulmonary adj3 fibrosis).mp,kw.
37	(pulmonary adj3 fibrocystic disease*).mp,kw.
38	mucoviscidosis.mp,kw.
39	mucoviscoidosis.mp,kw.

40 (interstitial* adj2 lung*).mp,kw.
41 (interstitial* adj2 pneumoni*).mp,kw.
42 (interstitial* adj2 pneumopath*).mp,kw.
43 (autoimmune adj2 lung disease*).mp,kw.
44 (auto-immune adj2 lung disease*).mp,kw.
45 diffuse parenchymal lung*.mp,kw.
46 (alveolit* adj2 fibros*).mp,kw.
47 (fibrocystic adj2 pulmonary adj2 dysplasia*).mp,kw.
48 (crytogenic adj2 pneumoni*).mp,kw.
49 allergic alveolit*.mp,kw.
50 (hypersensitivity adj1 pneumoni*).mp,kw.
51 (respiratory adj2 hypersensitiv*).mp,kw.
52 (airway* adj2 hyperresponsive*).mp,kw.
53 (airway* adj2 hyper-responsive*).mp,kw.
54 (goodpasture* adj2 syndrome*).mp,kw.
55 (goodpasture* adj2 disease*).mp,kw.
56 (pneumorenal adj2 syndrome*).mp,kw.
57 (pneumo-renal adj2 syndrome*).mp,kw.
58 anti-gbm disease*.mp,kw.
59 anti-glomerular basement membrane disease*.mp,kw.
60 (Lung Purpura adj2 Nephritis).mp,kw.
61 (Granulomatosis adj2 Polyangiiti*).mp,kw.
62 Wegener* Granulomatosis.mp,kw.
63 (Langerhan*-cell adj2 histiocytosis).mp,kw.
64 histiocytosis-x.mp,kw.
65 (histiocytos* adj2 langerhan*).mp,kw.
66 (generalized adj1 histiocytos*).mp,kw.
67 (reticuloendothelios* adj1 non-lipid).mp,kw.
68 (reticuloendothelios* adj2 aleukemic).mp,kw.
69 letterer-siwe disease*.mp,kw.
70 schueller christian.mp,kw.
71 schuller-christian.mp,kw.
72 (langerhan* adj2 granulomatos*).mp,kw.
73 hashimoto-pritzger.mp,kw.
74 Eosinophilic Granuloma*.mp,kw.
75 Pneumoconios*.mp,kw.
76 Bagassosis.mp,kw.
77 Pneumoconios*.mp,kw.
78 pneumonoconios*.mp,kw.
79 pneumokonios*.mp,kw.
80 pneumonokonios*.mp,kw.
81 (lung* adj2 coniosis).mp,kw.
82 silicoarthritis.mp,kw.

83 (Caplan? adj2 syndrome*).mp,kw.
84 (Caplan? adj2 disease*).mp,kw.
85 (Pulmonary adj2 Hypertension).mp,kw.
86 (pulmonary adj2 hypertensive).mp,kw.
87 (lung* adj2 hypertension).mp,kw.
88 (Pulmonary adj2 Veno-Occlusive disease*).mp,kw.
89 (Pulmonary adj2 Venoocclusive Disease*).mp,kw.
90 (pulmonary adj2 vascular disease*).mp,kw.
91 (pulmonary adj2 artery disease*).mp,kw.
92 (pulmonary adj2 vascular disorder*).mp,kw.
93 (pulmonary adj2 vasculopath*).mp,kw.
94 (vascular adj2 lung disease*).mp,kw.
95 (occupational adj2 lung disease*).mp,kw.
96 Bronchiectas*.mp,kw.
97 ciliary dyskinesia*.mp,kw.
98 ciliostasis.mp,kw.
99 (ciliary adj2 immotility).mp,kw.
100 (ciliary adj2 motility disorder*).mp,kw.
101 (Kartagener* adj2 syndrome*).mp,kw.
102 (Kartagener* adj2 triad*).mp,kw.
103 (siewert adj2 syndrome*).mp,kw.
104 or/1-103
105 (cat adj2 scan*).mp,kw.
106 (comput* adj2 tomograph*).mp,kw.
107 CT.ti,ab,kw.
108 tomodensitometr*.mp,kw.
109 (electron adj2 tomograph*).mp,kw.
110 cross-sectional area*.mp,kw.
111 or/105-110
112 fat.mp,kw.
113 muscle*.tw,kw.
114 muscular*.tw,kw.
115 (adipose adj3 tissue*).mp,kw.
116 adiposity.mp,kw.
117 sarcop?enia.mp,kw.
118 myop?enia.mp,kw.
119 body mass index.mp,kw.
120 BMI.mp,kw.
121 overweight.mp,kw.
122 over-weight.mp,kw.
123 obesity.mp,kw.
124 obese.mp,kw.
125 (body adj2 composition*).mp,kw.

126	(lean adj2 mass).mp,kw.
127	(analytic adj2 morphomic*).mp,kw.
128	(psoas adj2 area*).mp,kw.
129	rect* abdomini*.mp,kw.
130	transvers* abdomini*.mp,kw.
131	oblique*.mp,kw.
132	erector spina*.mp,kw.
133	quadratus lumborum.mp,kw.
134	intercostal*.mp,kw.
135	pectoralis.mp,kw.
136	serratus anterior.mp,kw.
137	latissim* dorsi.mp,kw.
138	(levator adj2 scapula*).mp,kw.
139	trapezius.mp,kw.
140	rhomboid*.mp,kw.
141	infraspinat*.mp,kw.
142	(rotator adj2 cuff?).mp,kw.
143	subscapulari*.mp,kw.
144	supraspinat*.mp,kw.
145	(teres adj2 major).mp,kw.
146	(teres adj2 minor).mp,kw.
147	(lean adj2 tissue).mp,kw.
148	Myosteatosis.mp,kw.
149	or/112-148
150	104 and 111
151	149 and 150

Cochrane Central Register of Controlled Trials <2014 to September 9, 2021>

#	Searches
1	[chronic respiratory disease incl lung transplantation]
2	Lung Diseases/
3	exp Lung Transplantation/
4	(chronic adj3 lung disease*).mp,kw.
5	(chronic adj3 respiratory disease*).mp,kw.
6	(chronic adj3 pulmonary disease*).mp,kw.
7	(chronic adj2 pneumopath*).mp,kw.
8	(lung* adj2 transplant*).mp,kw.
9	(lung* adj2 graft*).mp,kw.
10	(pulmonary adj2 transplant*).mp,kw.
11	(pulmonary adj2 graft*).mp,kw.
12	alpha 1-Antitrypsin Deficiency/
13	(alpha 1-Antitrypsin adj2 deficien*).mp,kw.
14	exp Asthma/

15 asthma*.mp,kw.
16 exp Bronchitis/
17 bronchiti*.mp,kw.
18 bronchiolitis.mp,kw.
19 (bronchiole adj2 disorder*).mp,kw.
20 (small airway* adj2 disease*).mp,kw.
21 exp Lung Diseases, Obstructive/
22 copd.mp,kw.
23 (obstructive adj2 lung).mp,kw.
24 (obstructive adj2 pulmonary).mp,kw.
25 (obstructive adj2 respiratory).mp,kw.
26 (chronic adj3 airflow obstruction*).mp,kw.
27 (chronic adj3 airway disease*).mp,kw.
28 coad.mp,kw.
29 Granulomatous Disease, Chronic/
30 granulomatous disease*.mp,kw.
31 (bulbous adj2 emphysema*).mp,kw.
32 (bullous adj2 emphysema*).mp,kw.
33 (emphysema* adj3 centrilobular).mp,kw.
34 (centriacinar adj3 emphysema*).mp,kw.
35 (emphysema* adj3 focal).mp,kw.
36 (emphysema* adj3 interstitial).mp,kw.
37 (emphysema* adj3 panacinar).mp,kw.
38 (emphysema* adj3 pulmonary).mp,kw.
39 (emphysema* adj3 lung*).mp,kw.
40 (emphysema* adj3 respiratory).mp,kw.
41 (lobular adj3 emphysema*).mp,kw.
42 (panlobular adj3 emphysema*).mp,kw.
43 Cystic Fibrosis/
44 cystic fibrosis.mp,kw.
45 (pulmonary adj3 fibrosis).mp,kw.
46 (pulmonary adj3 fibrocystic disease*).mp,kw.
47 mucoviscidosis.mp,kw.
48 mucoviscoidosis.mp,kw.
49 exp Lung Diseases, Interstitial/
50 (interstitial* adj2 lung*).mp,kw.
51 (interstitial* adj2 pneumoni*).mp,kw.
52 (interstitial* adj2 pneumopath*).mp,kw.
53 (autoimmune adj2 lung disease*).mp,kw.
54 (auto-immune adj2 lung disease*).mp,kw.
55 diffuse parenchymal lung*.mp,kw.
56 (alveolit* adj2 fibros*).mp,kw.
57 (fibrocystic adj2 pulmonary adj2 dysplasia*).mp,kw.

58 (crytogenic adj2 pneumoni*).mp,kw.
59 allergic alveolit*.mp,kw.
60 (hypersensitivity adj1 pneumoni*).mp,kw.
61 exp Respiratory Hypersensitivity/
62 (respiratory adj2 hypersensitiv*).mp,kw.
63 (airway* adj2 hyperresponsive*).mp,kw.
64 (airway* adj2 hyper-responsive*).mp,kw.
65 (goodpasture* adj2 syndrome*).mp,kw.
66 (goodpasture* adj2 disease*).mp,kw.
67 (pneumorenal adj2 syndrome*).mp,kw.
68 (pneumo-renal adj2 syndrome*).mp,kw.
69 anti-gbm disease*.mp,kw.
70 anti-glomerular basement membrane disease*.mp,kw.
71 (Lung Purpura adj2 Nephritis).mp,kw.
72 (Granulomatosis adj2 Polyangiiti*).mp,kw.
73 Wegener* Granulomatosis.mp,kw.
74 (Langerhan*-cell adj2 histiocytosis).mp,kw.
75 histiocytosis-x.mp,kw.
76 (histiocytos* adj2 langerhan*).mp,kw.
77 (generalized adj1 histiocytos*).mp,kw.
78 (reticuloendothelios* adj1 non-lipid).mp,kw.
79 (reticuloendothelios* adj2 aleukemic).mp,kw.
80 letterer-siwe disease*.mp,kw.
81 schueller christian.mp,kw.
82 schuller-christian.mp,kw.
83 (langerhan* adj2 granulomatos*).mp,kw.
84 hashimoto-pritzger.mp,kw.
85 Eosinophilic Granuloma*.mp,kw.
86 Pneumoconios*.mp,kw.
87 Bagassosis.mp,kw.
88 exp Pneumoconiosis/
89 Pneumoconios*.mp,kw.
90 pneumonoconios*.mp,kw.
91 pneumokonios*.mp,kw.
92 pneumonokonios*.mp,kw.
93 (lung* adj2 coniosis).mp,kw.
94 silicoarthritis.mp,kw.
95 (Caplan? adj2 syndrome*).mp,kw.
96 (Caplan? adj2 disease*).mp,kw.
97 exp Hypertension, Pulmonary/
98 (Pulmonary adj2 Hypertension).mp,kw.
99 (pulmonary adj2 hypertensive).mp,kw.
100 (lung* adj2 hypertension).mp,kw.

101 Pulmonary Veno-Occlusive Disease/
102 (Pulmonary adj2 Veno-Occlusive disease*).mp,kw.
103 (Pulmonary adj2 Venoocclusive Disease*).mp,kw.
104 (pulmonary adj2 vascular disease*).mp,kw.
105 (pulmonary adj2 artery disease*).mp,kw.
106 (pulmonary adj2 vascular disorder*).mp,kw.
107 (pulmonary adj2 vasculopath*).mp,kw.
108 (vascular adj2 lung disease*).mp,kw.
109 (occupational adj2 lung disease*).mp,kw.
110 exp bronchiectasis/
111 Bronchiectas*.mp,kw.
112 ciliary dyskinesia*.mp,kw.
113 ciliostasis.mp,kw.
114 exp Ciliary Motility Disorders/
115 (ciliary adj2 immotility).mp,kw.
116 (ciliary adj2 motility disorder*).mp,kw.
117 (Kartagener* adj2 syndrome*).mp,kw.
118 (Kartagener* adj2 triad*).mp,kw.
119 (siewert adj2 syndrome*).mp,kw.
120 or/2-119
121 [CT/computed tomography]
122 (cat adj2 scan*).mp,kw.
123 exp Tomography, X-Ray Computed/
124 (comput* adj2 tomograph*).mp,kw.
125 CT.ti,ab,kw.
126 tomodensitometr*.mp,kw.
127 (electron adj2 tomograph*).mp,kw.
128 cross-sectional area*.mp,kw.
129 or/122-128
130 120 and 129
131 [body composition]
132 exp Body Composition/
133 exp "Body Weights and Measures"/
134 exp Muscle, Skeletal/
135 exp Adipose Tissue/
136 exp Muscular Atrophy/
137 Muscle Strength/
138 Muscle Weakness/
139 fat.mp,kw.
140 muscle*.tw,kw.
141 muscular*.tw,kw.
142 (adipose adj3 tissue*).mp,kw.
143 adiposity.mp,kw.

144 sarcop?enia.mp,kw.
145 myop?enia.mp,kw.
146 body mass index.mp,kw.
147 BMI.mp,kw.
148 overweight.mp,kw.
149 over-weight.mp,kw.
150 obesity.mp,kw.
151 obese.mp,kw.
152 (body adj2 composition*).mp,kw.
153 (lean adj2 mass).mp,kw.
154 (analytic adj2 morphomic*).mp,kw.
155 (psoas adj2 area*).mp,kw.
156 rect* abdomini*.mp,kw.
157 transvers* abdomini*.mp,kw.
158 oblique*.mp,kw.
159 erector spina*.mp,kw.
160 quadratus lumborum.mp,kw.
161 intercostal*.mp,kw.
162 pectoralis.mp,kw.
163 serratus anterior.mp,kw.
164 latissim* dorsi.mp,kw.
165 (levator adj2 scapula*).mp,kw.
166 trapezius.mp,kw.
167 rhomboid*.mp,kw.
168 infraspinat*.mp,kw.
169 (rotator adj2 cuff?).mp,kw.
170 subscapulari*.mp,kw.
171 supraspinat*.mp,kw.
172 (teres adj2 major).mp,kw.
173 (teres adj2 minor).mp,kw.
174 (lean adj2 tissue).mp,kw.
175 Myosteatosis.mp,kw.
176 or/132-175
177 130 and 176
178 limit 177 to english language

Table 5S: Search strategy used for CINAHL:

EBSCOhost - CINAHL with Full Text

#	Query
S171	S123 AND S169 [Limiters - English Language]
S170	S123 AND S169
S169	S124 OR S125 OR S126 OR S127 OR S128 OR S129 OR S130 OR S131 OR S132 OR S133 OR S134 OR S135 OR S136 OR S137 OR S138 OR S139 OR S140 OR S141 OR S142 OR S143 OR S144 OR S145 OR S146 OR S147 OR S148 OR S149 OR S150 OR S151 OR S152 OR S153 OR S154 OR S155 OR S156 OR S157 OR S158 OR S159 OR S160 OR S161 OR S162 OR S163 OR S164 OR S165 OR S166 OR S167 OR S168
S168	TI Myosteatosis OR AB Myosteatosis
S167	TI lean N2 tissue OR AB lean N2 tissue
S166	TI teres N2 minor OR AB teres N2 minor
S165	TI teres N2 major OR AB teres N2 major
S164	TI supraspinat* OR AB supraspinat*
S163	TI subscapulari* OR AB subscapulari*
S162	TI rotator N2 cuff* OR AB rotator N2 cuff*
S161	TI infraspinat* OR AB infraspinat*
S160	TI rhomboid* OR AB rhomboid*
S159	TI trapezius OR AB trapezius
S158	TI levator N2 scapula* OR AB levator N2 scapula*
S157	TI latissim* dorsi OR AB latissim* dorsi
S156	TI serratus anterior OR AB serratus anterior
S155	TI pectoralis OR AB pectoralis
S154	TI intintercostal* OR AB intercostal*
S153	TI quadratus lumborum OR AB quadratus lumborum
S152	TI erector spina* OR AB erector spina*
S151	TI oblique* OR AB oblique*
S150	TI transvers* abdomini* OR AB transvers* abdomini*
S149	TI rect* abdomini* OR AB rect* abdomini*
S148	TI psoas N2 area* OR AB psoas N2 area*
S147	TI analytic N2 morphomic* OR AB analytic N2 morphomic*
S146	TI lean N2 mass OR AB lean N2 mass

S145 TI body N2 composition* OR AB body N2 composition*

S144 TI obese OR AB obese

S143 TI obesity OR AB obesity

S142 TI over-weight OR AB over-weight

S141 TI overweight OR AB overweight

S140 TI BMI OR AB BMI

S139 TI body mass index OR AB body mass index

S138 TI myop#enia OR AB myop#enia

S137 TI sarcop#enia OR AB sarcop#enia

S136 TI adiposity OR AB adiposity

S135 AB adipose N3 tissue* OR adipose N3 tissue*

S134 TI muscular* OR AB muscular*

S133 TI muscle* OR AB muscle*

S132 TI fat OR AB fat

S131 (MH "Fat Free Mass")

S130 (MH "Body Weight+")

S129 (MH "Muscle Strength+")

S128 (MH "Muscular Atrophy+")

S127 (MH "Adipose Tissue+")

S126 (MH "Muscle, Skeletal+")

S125 (MH "Body Weights and Measures+")

S124 (MH "Body Composition+")

S123 S113 AND S122

S122 S114 OR S115 OR S116 OR S117 OR S118 OR S119 OR S120 OR S121

S121 (MH "Thorax+/RA")

S120 TI electron N2 tomograph* OR AB electron N2 tomograph*

S119 TI tomodensitometr* OR AB tomodensitometr*

S118 TI "CT" OR AB "CT"

S117 TI comput* N2 tomograph* OR AB comput* N2 tomograph*

S116 TI cat N2 scan* OR AB cat N2 scan*

S115 TI cross-sectional area* OR AB cross-sectional area*

S114 (MH "Tomography, X-Ray Computed+")

S113 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14

OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91 OR S92 OR S93 OR S94 OR S95 OR S96 OR S97 OR S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111 OR S112

S112 TI pulmonary N2 graft* OR AB pulmonary N2 graft*

S111 TI pulmonary N2 transplant* OR AB pulmonary N2 transplant*

S110 TI lung* N2 graft* OR AB lung* N2 graft*

S109 TI lung* N2 transplant* OR AB lung* N2 transplant*

S108 (MH "Lung Transplantation+")

S107 TI siewert N2 syndrome* OR AB siewert N2 syndrome*

S106 TI Kartagener* N2 triad* OR AB Kartagener* N2 triad*

S105 TI Kartagener* N2 syndrome* OR AB Kartagener* N2 syndrome*

S104 TI ciliary N2 motility disorder* OR AB ciliary N2 motility disorder*

S103 TI ciliary N2 immotility OR AB ciliary N2 immotility

S102 TI ciliostasis OR AB ciliostasis

S101 TI ciliary dyskinesia* OR AB ciliary dyskinesia*

S100 (MH "Respiratory System Abnormalities+")

S99 (MH "Ciliary Motility Disorders")

S98 TI Bronchiectas* OR AB Bronchiectas*

S97 TI occupational N2 lung disease* OR AB occupational N2 lung disease*

S96 TI vascular N2 lung disease* OR AB vascular N2 lung disease*

S95 TI pulmonary N2 vasculopath* OR AB pulmonary N2 vasculopath*

S94 TI pulmonary N2 vascular disorder* OR AB pulmonary N2 vascular disorder*

S93 TI pulmonary N2 artery disease* OR AB pulmonary N2 artery disease*

S92 TI pulmonary N2 vascular disease* OR AB pulmonary N2 vascular disease*

S91 TI Pulmonary N2 Venoocclusive Disease* OR AB Pulmonary N2 Venoocclusive Disease*

S90 TI Pulmonary N2 Veno-Occlusive disease* OR AB Pulmonary N2 Veno-Occlusive disease*

S89 (MH "Pulmonary Heart Disease")

S88 TI lung* N2 hypertension OR AB lung* N2 hypertension

S87 TI pulmonary N2 hypertensive OR AB pulmonary N2 hypertensive

S86 TI Pulmonary N2 Hypertension OR AB Pulmonary N2 Hypertension

S85 (MH "Hypertension, Pulmonary+")

S84 TI Caplan# N2 disease* OR AB Caplan# N2 disease*

S83 TI Caplan# N2 syndrome OR AB Caplan# N2 syndrome

S82 TI silicoarthritis OR AB silicoarthritis

S81 TI lung* N2 coniosis OR AB lung* N2 coniosis

S80 TI pneumonokonios* OR AB pneumonokonios*

S79 TI pneumokonios* OR AB pneumokonios*

S78 TI pneumonoconios* OR AB pneumonoconios*

S77 TI Bagassosis OR AB Bagassosis

S76 TI Pneumoconios* OR AB Pneumoconios*

S75 TI Eosinophilic Granuloma* OR AB Eosinophilic Granuloma*

S74 TI hashimoto-pritzger OR AB hashimoto-pritzger

S73 TI langerhan* N2 granulomatos* OR AB langerhan* N2 granulomatos*

S72 TI schuller-christian OR AB schuller-christian

S71 TI schueller christian OR AB schueller christian

S70 TI letterer-siwe disease* OR AB letterer-siwe disease*

S69 TI reticuloendothelios* N2 aleukemic OR AB reticuloendothelios* N2 aleukemic

S68 TI reticuloendothelios* N1 non-lipid OR AB reticuloendothelios* N1 non-lipid

S67 TI generalized N1 histiocytos* OR AB generalized N1 histiocytos*

S66 TI histiocytos* N2 langerhan* OR AB histiocytos* N2 langerhan*

S65 TI histiocytosis-x OR AB histiocytosis-x

S64 TI Langerhan*-cell N2 histiocytosis OR AB Langerhan*-cell N2 histiocytosis

S63 TI Wegener* Granulomatosis OR AB Wegener* Granulomatosis

S62 TI Granulomatosis N2 Polyangiiti* OR AB Granulomatosis N2 Polyangiiti*

S61 TI Lung Purpura N2 Nephritis OR AB Lung Purpura N2 Nephritis

S60 TI anti-glomerular basement membrane disease* OR AB anti-glomerular basement membrane disease*

S59 TI anti-glomerular basement membrane disease* OR anti-glomerular basement membrane disease*

S58 TI anti-gbm disease* OR AB anti-gbm disease*

S57 TI pneumo-renal N2 syndrome* OR AB pneumo-renal N2 syndrome*

S56 TI pneumorenal N2 syndrome* OR AB pneumorenal N2 syndrome*

S55 TI goodpasture* N2 disease* OR AB goodpasture* N2 disease*

S54 TI goodpasture* N2 syndrome* OR AB goodpasture* N2 syndrome*

S53 TI airway* N2 hyper-responsive* OR AB airway* N2 hyper-responsive*

S52 TI airway* N2 hyperresponsive* OR AB airway* N2 hyperresponsive*

S51 TI respiratory N2 hypersensitiv* OR AB respiratory N2 hypersensitiv*

S50 (MH "Respiratory Hypersensitivity+")

S49 TI hypersensitivity N1 pneumoni* OR AB hypersensitivity N1 pneumoni*

S48 TI allergic alveolit* OR AB allergic alveolit*

S47 TI crytogenic N2 pneumoni* OR AB crytogenic N2 pneumoni*

S46 TI fibrocystic N2 pulmonary N2 dysplasia* OR AB fibrocystic N2 pulmonary N2 dysplasia*

S45 TI alveolit* N2 fibros* OR AB alveolit* N2 fibros*

S44 TI diffuse parenchymal lung* OR AB diffuse parenchymal lung*

S43 TI auto-immune N2 lung disease* OR AB auto-immune N2 lung disease*

S42 TI autoimmune N2 lung disease* OR AB autoimmune N2 lung disease*

S41 TI interstitial* N2 pneumopath* OR AB interstitial* N2 pneumopath*

S40 TI interstitial* N2 pneumoni* OR AB interstitial* N2 pneumoni*

S39 TI interstitial* N2 lung* OR AB interstitial* N2 lung*

S38 TI mucoviscoidosis OR AB mucoviscoidosis

S37 TI mucoviscidosis OR AB mucoviscidosis

S36 TI pulmonary N3 fibrocystic disease* OR AB pulmonary N3 fibrocystic disease*

S35 TI pulmonary N3 fibrosis OR AB pulmonary N3 fibrosis

S34 TI cystic fibrosis OR AB cystic fibrosis

S33 TI panlobular N3 emphysema* OR AB panlobular N3 emphysema*

S32 TI lobular N3 emphysema OR AB lobular N3 emphysema

S31 TI emphysema* N3 respiratory OR AB emphysema* N3 respiratory

S30 TI emphysema* N3 lung* OR AB emphysema* N3 lung*

S29 TI emphysema* N3 pulmonary OR AB emphysema* N3 pulmonary

S28 TI emphysema* N3 panacinar OR AB emphysema* N3 panacinar

S27 TI emphysema* N3 interstitial OR AB emphysema* N3 interstitial

S26 TI emphysema* N3 focal OR AB emphysema* N3 focal

S25 TI centriacinar N3 emphysema* OR AB centriacinar N3 emphysema*

S24 TI emphysema* N3 centrilobular OR AB emphysema* N3 centrilobular

S23 TI bullous N2 emphysema* OR AB bullous N2 emphysema*

S22 TI bulbous N2 emphysema* OR AB bulbous N2 emphysema*

S21 TI granulomatous disease* OR AB granulomatous disease*

S20 TI coad OR AB coad

S19 TI chronic N3 airway disease* OR AB chronic N3 airway disease*

S18	TI chronic N3 airflow obstruction* OR AB chronic N3 airflow obstruction*
S17	TI obstructive N2 respiratory OR AB obstructive N2 respiratory
S16	TI obstructive N2 pulmonary OR AB obstructive N2 pulmonary
S15	TI obstructive N2 lung OR AB obstructive N2 lung
S14	TI copd OR AB copd
S13	TI small airway* N2 disease* OR AB small airway* N2 disease*
S12	TI bronchiole N2 disorder* OR AB bronchiole N2 disorder*
S11	TI bronchiolitis OR AB bronchiolitis
S10	TI bronchiti* OR AB bronchiti*
S9	TI asthma* OR AB asthma*
S8	TI alpha 1-Antitrypsin N2 deficien* OR AB alpha 1-Antitrypsin N2 deficien*
S7	(MH "Alpha 1-Antitrypsin Deficiency")
S6	TI chronic N2 pneumopath* OR AB chronic N2 pneumopath*
S5	TI chronic N3 pulmonary disease* OR AB chronic N3 pulmonary disease*
S4	TI chronic N3 respiratory disease* OR AB chronic N3 respiratory disease*
S3	TI chronic N3 lung disease* OR AB chronic N3 lung disease*
S2	(MH "Bronchial Diseases+")
S1	(MH "Lung Diseases+")

Table 6S: Search strategy used for PubMed:

PubMed Query

Search ((((((((((((((((((((((((((((((((((("chronic"[All Fields]) AND (lung disease*[All Fields] OR respiratory disease*[All Fields] OR pulmonary disease*[All Fields] OR pneumopath*[All Fields] OR airflow obstruction*[All Fields] OR airway disease*[All Fields]))) OR (((asthma*[All Fields] OR bronchiti*[All Fields] OR "bronchiolitis"[All Fields] OR "copd"[All Fields] OR "coad"[All Fields] OR "cystic fibrosis"[All Fields] OR "mucoviscidosis"[All Fields] OR "mucoviscoidosis"[All Fields] OR "histiocytosis-x"[All Fields] OR "schueller christian"[All Fields] OR "schuller-christian"[All Fields] OR "hashimoto-pritzger"[All Fields] OR Pneumoconios*[All Fields] OR "Bagassosis"[All Fields] OR pneumonoconios*[All Fields] OR pneumokonios*[All Fields] OR pneumonokonios*[All Fields] OR "silicoarthritis"[All Fields] OR Bronchiectas*[All Fields] OR "ciliostasis"[All Fields])) OR (granulomatous disease*[All Fields] OR “diffuse parenchymal lung”[All Fields] OR “diffuse parenchymal lungs”[All Fields] OR allergic alveolit*[All Fields] OR anti-gbm disease*[All Fields] OR anti-glomerular basement membrane disease*[All Fields] OR Wegener* AND Granulomatosis[All Fields] OR letterer-siwe disease*[All Fields] OR Eosinophilic Granuloma*[All Fields] OR ciliary dyskinesia*[All Fields]))) OR (("bronchiole"[All Fields]) AND disorder*[All Fields])) OR (((small airway*[All Fields] OR goodpasture*[All Fields] OR Caplan*[All Fields])) AND disease*[All Fields])) OR ((Caplan*[Title/Abstract]) AND disease*[Title/Abstract])) OR (("obstructive"[All Fields]) AND ("lung"[All Fields] OR "pulmonary"[All Fields] OR "respiratory"[All Fields]))) OR ((emphysema*[All Fields]) AND ("bulbous"[All Fields] OR "bullous"[All Fields] OR "centrilobular"[All Fields] OR "centriacinar"[All Fields] OR "focal"[All Fields] OR "interstitial"[All Fields] OR "panacinar"[All Fields] OR "pulmonary"[All Fields] OR “lung”[All Fields] OR “lungs”[All Fields] OR "respiratory"[All Fields] OR "lobular"[All Fields] OR "panlobular"[All Fields]))) OR (("pulmonary"[All Fields]) AND ("fibrosis"[All Fields] OR fibrocystic disease*[All Fields] OR "Hypertension"[All Fields] OR "hypertensive"[All Fields] OR Veno-Occlusive disease*[All Fields] OR Venoocclusive Disease*[All Fields] OR vascular disease*[All Fields] OR artery disease*[All Fields] OR vascular disorder*[All Fields] OR vasculopath*[All Fields]))) OR ((interstitial*[All Fields]) AND ("lung"[All Fields] OR "lungs"[All Fields] OR pneumoni*[All Fields] OR pneumopath*[All Fields]))) OR ((lung disease*[All Fields]) AND ("autoimmune"[All Fields] OR "auto-immune"[All Fields] OR "vascular"[All Fields] OR "occupational"[All Fields]))) OR ((syndrome*[All Fields]) AND Caplan*[Title/Abstract])) OR ((syndrome*[All Fields]) AND (goodpasture*[All Fields] OR "pneumorenal"[All Fields] OR "pneumo-renal"[All Fields] OR Kartagener*[All Fields] OR "siewert"[All Fields]))) OR ((alveolit*[All Fields]) AND fibros*[All Fields])) OR ((("fibrocystic"[All Fields]) AND "pulmonary"[All Fields]) AND dysplasia*[All Fields])) OR ((pneumoni*[All Fields]) AND ("crytogenic"[All Fields] OR "hypersensitivity"[All Fields]))) OR ((airway*[All Fields]) AND (hyperresponsive*[All Fields] OR hyper-responsive*[All Fields]))) OR (("respiratory"[All Fields]) AND hypersensitiv*[All Fields])) OR (("Lung Purpura"[All Fields]) AND "Nephritis"[All Fields])) OR ((Langerhan*[All Fields]) AND ("histiocytosis"[All Fields] OR granulomatos*[All Fields] OR histiocytos*[All Fields]))) OR (("Granulomatosis"[All Fields]) AND Polyangiiti*[All Fields])) OR (("generalized"[All Fields]) AND histiocytos*[All Fields])) OR ((reticuloendothelios*[All Fields]) AND ("non-lipid"[All Fields] OR "aleukemic"[All Fields]))) OR ((“lung”[All Fields] OR “lungs”[All Fields]) AND ("coniosis"[All Fields] OR "hypertension"[All Fields]))) OR (("ciliary"[All Fields]) AND ("immotility"[All Fields] OR motility disorder*[All Fields]))) OR ((Kartagener*[All Fields]) AND triad*[All Fields])) OR (("alpha 1-Antitrypsin"[All Fields]) AND deficien*[All Fields])))))) OR (("lung"[All Fields] OR "lungs"[All Fields] OR "pulmonary"[All Fields])) AND ("transplant"[All Fields] OR "transplants"[All Fields] OR "transplantation"[All Fields] OR "graft"[All Fields] OR "grafts"[All Fields]))))) AND ((((((((((((((((((((“fat”[All Fields” OR “muscle”[All Fields] OR “muscles”[Title/Abstract] OR “muscular”[Title/Abstract”] OR “muscularity”[Title/Abstract] OR “adiposity”[All Fields] OR “sarcopenia”[All Fields] OR “sarcopaenia”[All Fields] OR “myopenia”[All Fields] OR “myopaenia”[All Fields] OR “body mass index”[All Fields] OR “BMI”[All Fields] OR “overweight”[All Fields] or “over-weight”[All Fields] or “obesity”[All Fields] or “obese”[All Fields] or “quadratus lumborum”[All Fields] OR “pectoralis”[All Fields] OR “intercostal”[All Fields] OR “intercostals”[All Fields] OR “serratus anterior”[All Fields] OR “trapezius”[All Fields] OR “Myosteatosis”[All Fields]))) OR (("adipose"[All Fields]) AND ("tissue"[All Fields] or "tissues"[All Fields]))) OR ((("body"[All Fields]) AND ("composition"[All Fields] OR "compositions"[All Fields])))))) OR (("lean"[All Fields]) AND "mass"[All Fields])) OR (("analytic morphomic"[All Fields]) OR "analytic morphomics"[All Fields])) OR (("psoas"[All Fields]) AND ("area"[All Fields] OR "areas"[All Fields]))) OR rectus abdomin*[All Fields]) OR transvers* abdomin*[All Fields]) OR (("oblique"[All Fields]) OR "obliques"[All Fields])) OR erector spina*[All Fields]) OR latissim* dorsi[All Fields]) OR (("levator"[All Fields]) AND scapula*[All Fields])) OR (("rhomboid"[All Fields]) OR "rhomboids"[All Fields])) OR infraspinat*[All Fields]) OR (("rotator"[All Fields]) AND ("cuff"[All Fields] OR "cuffs"[All Fields]))) OR ((subscapulari*[All Fields]) OR supraspinat*[All Fields])) OR (("teres"[All Fields]) AND ("major"[All Fields] OR "minor"[All Fields]))) OR (("lean"[All Fields]) AND "tissue"[All Fields])))) AND (pubstatusaheadofprint OR publisher[sb] OR pubmednotmedline[sb])

Table 7S: NIH Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies:

Author	Year	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	*Overall Rating
Attaway	2021	Yes	Yes	CD	Yes	No	Yes	CD	No	Yes	No	Yes	Yes	NA	Yes	Good
Ezponda	2021	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Good
Higashimoto	2021	Yes	Yes	Yes	No	No	No	Yes	No	Yes	Yes	Yes	NA	Yes	No	Good
Jeon	2021	Yes	Yes	No	Yes	No	Yes	NA	No	Yes	No	Yes	CD	NA	Yes	Good
Mason	2021	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	CD	Yes	Good
Pishgar	2021	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Good
Shirahata	2021	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No	Yes	CD	No	Yes	Fair
Tashiro	2021	Yes	Yes	CD	CD	No	No	No	No	Yes	No	Yes	CD	NA	Yes	Poor
Zhi	2019	Yes	Yes	Yes	CD	Yes	NA	No	Yes	No	No	Yes	Yes	No	No	Fair
Sanders	2019	Yes	NA	Yes	NA	No	Yes	Yes	Yes	Yes	No	Yes	NR	Yes	Yes	Fair
Coats	2018	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	NR	No	Yes	Good
Wallbridge	2018	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Good
Ju	2018	Yes	Yes	NA	Yes	No	No	NA	Yes	Yes	No	Yes	Yes	No	Yes	Good

Martin	2017	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Good
Martinez	2017	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Good
McDonald	2017	Yes	Yes	Yes	No	No	Yes	Yes	NR	No	No	Yes	NR	Yes	Yes	Fair
Taka	2017	Yes	Yes	CD	Yes	No	Yes	NA	Yes	Yes	No	Yes	NR	NA	No	Fair
Higami	2016	Yes	Yes	Yes	Yes	NR	NA	NA	Yes	No	NA	Yes	NR	NA	Yes	Poor
Tanimura	2016	Yes	Yes	CD	Yes	Yes	Yes	Yes	No	Yes	Yes	NR	Yes	Yes	Yes	Good
Diaz	2015	Yes	Yes	Yes	Yes	NR	NA	NA	Yes	Yes	NA	Yes	CD	NA	Yes	Good
Gaisi	2015	Yes	Yes	No	Yes	NR	Yes	Yes	NR	Yes	No	Yes	NR	Yes	Yes	Good
Diaz	2014	Yes	Yes	No	Yes	NR	NA	NA	Yes	Yes	NA	Yes	Yes	NA	Yes	Fair
Park	2014	Yes	Yes	CD	Yes	NR	No	NR	Yes	Yes	Yes	Yes	NR	NA	Yes	Fair
McDonald	2014	Yes	No	Yes	No	No	Yes	NA	Yes	Yes	No	Yes	CD	Yes	Yes	Fair
Zagaceta	2013	Yes	Yes	CD	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	NA	No	Fair
Van den Borst	2012	Yes	Yes	CD	Yes	No	Yes	Yes	Yes	Yes	No	Yes	CD	Yes	Yes	Good
Furutate	2011	Yes	Yes	NA	Yes	NR	NA	NA	Yes	No	No	Yes	NR	NA	NR	Fair
Guerri	2010	Yes	Yes	NR	Yes	Yes	No	NA	No	Yes	No	Yes	NA	NA	Yes	Good

NIH Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies*:*

1. Was the research question or objective in this paper clearly stated?
2. Was the study population clearly specified and defined?
3. Was the participation rate of eligible persons at least 50%?
4. Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study pre-specified and applied uniformly to all participants?
5. Was a sample size justification, power description, or variance and effect estimates provided?
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?
8. For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)?
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?
10. Was the exposure(s) assessed more than once over time?
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?
12. Were the outcome assessors blinded to the exposure status of participants?
13. Was loss to follow-up after baseline 20% or less?
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?

*Overall rating of study quality (good, fair, or poor) is an overall interpretation based on risk of bias from the responses to the 14 questions with consensus reached between two reviewers.

Reference:

NIH: Quality assessment tool for observational cohort and cross-sectional studies: In Systematic Evidence Reviews and Clinical Practice Guidelines. National Heart, Lung and Blood Institute 2014.
Website: https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools (Last Accessed April 2, 2022)

Table 8S: Associations of Muscle and Adiposity with BODE Index Measurements in Participants with Chronic Obstructive Pulmonary Disease.

Author (year)	CT Measure	BODE INDEX MEASUREMENTS				Summary
		BMI	Obstruction	Dyspnea	Exercise / 6MWD	
Attaway (2021)	Prospective cohort study. Pectoralis muscle (PM) and Erector Spinae Muscle (ESM) CSA (cm^2) were evaluated with CT scan at **baseline. Follow-up (median, 23.6 months)**.	**BMI:** Increased PM: R^2 = 0.23, p<0.001** ESM: R^2 = 0.20, p<0.001** Increased PM (Females): R^2 = 0.39, p<0.001** Increased ESM (Females): R^2 = 0.32, p<0.001**	**FEV1/FVC Ratio (COPD only):** Increased PM: R^2 = 0.33, p<0.001** Increased ESM: R^2 = 0.23, p=0.221**	**mMRC (COPD only):** Increased PM: R^2 = 0.21, p=0.577** Increased ESM: R^2 = 0.22, p=0.622**	**6MWT (COPD only):** Increased PM: R^2 = 0.22, p=0.896** Increased ESM: R^2 = 0.21, p=0.658**	Both PM and ESM CSA correlated with BMI in both males and females. FEV1/FVC was significantly associated with PM CSA, but not ESM in COPD patients. No significant associations were found in either muscle groups for dyspnea or 6MWT.
Ezponda (2021)	Retrospective cohort. Psoas Density (PsD) was evaluated with CT scan (cm^2) at **baseline. Follow-up (median, 76.5 months)**.	**BMI:** PsD: r = −0.21, p = 0.002*	**BODE Index** ESM HR = 1.11, 95% CI (1.01-1.24), P=0.041**	NA	PsD: r =0.22, p = 0.001*	PsD demonstrated weak correlations with BMI and 6MWD. ESM shown to be independently associated with BODE index and displayed strong correlations with 6MWD.
Higashimoto (2021)	Retrospective cohort study. Pectoralis muscle (PM) and Erector Spinae Muscle (ESM) CSA (cm^2) were evaluated with CT scan at **baseline and annual follow-up.**	**BMI:** ESM (Baseline): r_s = 0.45, p<.001 PM (Baseline): r_s = 0.53, p<.001 ESM (Annual Change): r_s = -0.12, p=0.28 PM (Annual Change): r_s = -0.09, p=0.44	**FEV1, % predicted:** ESM (Baseline): r_s = 0.22, p=0.054 PM (Baseline): r_s = 0.24, p= 0.033 **FVC, % predicted:** ESM (Annual Change): r_s = 0.07, p=0.54 PM (Annual Change): r_s = 0.02, p= 0.89	**mMRC:** ESM (Baseline): r_s = -0.04, p=0.75 PM (Baseline): r_s = -0.19, p=0.10 ESM (Annual Change): r_s = 0.22, p=0.049 PM (Annual Change): r_s = 0.10, p=0.41	**6MWD:** ESM (Baseline): r_s = 0.42 p<0.01 PM (Baseline): r_s = 0.31, p=0.06 ESM (Annual Change): r_s = -0.07, p=0.69 PM (Annual Change): r_s = -0.12, p=0.48	ESM was moderately correlated with BMI and 6MWD at baseline, as PM was moderately correlated with BMI and FEV1, % at baseline. Annual changes in ESM were weakly and positively correlated with mMRC dyspnea scale.
Mason (2021)	Pectoralis muscle area (PMA) CSA (cm^2) evaluated with CT scan at **baseline, 12- and 36 months (ECLIPSE) and baseline and 5 years (COPDGene).**	**BMI** Decline of PMA over time associated with a decrease in BMI (p<0.001 *in both cohorts*)	**GOLD stage** PMA GOLD stage negatively associated with PMA (GOLD 1, p=0.062* [*COPDGene],* GOLD 2–4, p<0.001 [*Both Cohorts]*	NA	**6MWD** Decline of PMA over time was not associated with a decrease in 6MWD (p > 0.05 both cohorts)	PMA decline was associated with decrease in BMI. No significance found between PMA and GOLD stages or 6MWD.

Author (year)	CT Measure	BMI	Obstruction	Dyspnea	Exercise / 6MWD	Summary
Shirahata (2021)	Prospective cross-sectional study. Pectoralis Muscles PMA), rectus abdominis muscles (RAMA/D) (and erector spinae muscles (ESMA/D) were evaluated with CT scan	**BMI** PMA r = 0.566, p < 0.001* RAMA r = 0.571, p < 0.001* ESMA r = 0.598, p < 0.001*	**GOLD Stages:** PMA **0:** 30.2 ± 6.8; **1:** 30.1 ± 3.0; **2:** 32.7 ± 6.3; **3,4:** 28.6 ± 5.1 RAMA **0:** 8.5 ± 2.1; **1:** 8.7 ± 1.0; **2:** 9.1 ± 1.6; **3,4:** 8.1 ± 1.7 ESMA **0:** 25.3 ± 5.4; **1:** 26.5 ± 6.1; **2:** 27.6 ± 4.9; **3,4:** 24.3 ± 3.9	**mMRC** PMA r = 0.058, p = 0.736* RAMA r = 0.037, p = 0.831* ESMA r = 0.196, p =0.253*	**6MWD** PMA r = 0.246, p = 0.148* RAMA r = 0.241, p = 0.157* ESMA r = 0.156, p = 0.363*	Muscle areas showed moderate correlations with BMI only. Lower levels of muscle area were found in patients with GOLD 3,4, although no significant differences between groups were found.
Sanders (2019)	Posthoc analysis of a randomized controlled trial. Intramuscular Fat (IMF) and Muscle CSA (cm^2) were evaluated with CT scan at **baseline**.	NR	NR	NR	**6MWD:** IMF: B= 3.1 95% (0.23-5.94), p=0.035** Muscle CSA: B= 2.4 95% (0.2 - 4.6), p=0.036**	Increase in intramuscular fat and muscle cross-sectional area is associated with improved 6 min walk distance independent of gender and baseline 6MWD.
Coats (2018)	Secondary analysis of longitudinal cohort study from two study centers. Visceral Adipose Tissue (VAT), Subcutaneous Adipose Tissue (SCAT), Muscle CSA (cm^2) and Muscle Mean Attenuation (HU) were evaluated with CT scan at **baseline**.	NR	**GOLD 1 vs Control:** VAT CSA: association not shown; p=0.048** **GOLD 1 vs. 2+:** VAT CSA: association not shown; p=0.004* **GOLD 1 vs. 2+ vs. Control:** SCAT CSA: association not shown; p=NS** **GOLD 1 vs. 2+ vs. Control:** Muscle CSA: association not shown; p=NS** Muscle Attenuation: association not shown; p=0.004**	NR	NR	GOLD 1 individuals had decreased visceral adipose tissue cross-sectional area than controls and GOLD 2+ COPD individuals. Both subcutaneous adipose tissue and muscle cross-sectional area were similar between GOLD groups and control participants. Mean muscle tissue attenuation was lower in GOLD 2+ vs. GOLD 1 and non-COPD controls.

Author (year)	CT Measure	BMI	Obstruction	Dyspnea	Exercise / 6MWD	Summary
Martin (2017)	Secondary analysis of the ECLIPSE study. Visceral Adipose Tissue (VAT) and Muscle Attenuation (MT) CSAs (cm^2) were evaluated with CT scan at **baseline, 12- and 36 months.**	NR	**FEV1:** VAT: Data not shown, p = NS** Muscle CSA: Decreasing muscle CSA was associated with increased OR of accelerated FEV1 decline** (data not shown)	NR	**6MWD:** VAT: data not shown, p = NS ** Muscle CSA: Decreasing muscle CSA was associated with increased OR of low 6MWD** (data not shown]	Progressively increasing CSA of VAT was not associated with adverse clinical outcomes. Lower levels of muscle CSA were associated with larger declines in both FEV1 and 6MWD.
Higami (2016)	Prospective cross-sectional study. Epicardial Adipose Tissue (EAT) evaluated with CT scan.	**BMI:** EAT: r_s = 0.600, p<0.0001* OR: 1.23 [0.93-1.54], p<0.0001**	**$FEV_{1\ \%}$ predicted:** EAT: r_s = 0.197, p = 0.044* **$FVC_{\%}$ predicted:** r_s = 0.051, p = NS* **FEV1/FVC (%):** r_s = 0.234, p = NS*	**Dyspnea:** EAT: r_s = -0.047, p = NS*	NR	The EAT area was significantly associated with BMI, FEV1 (%predicted) and FEV1/FVC. Only BMI is independently associated with EAT area.
Diaz (2015)	Visceral Adipose Tissue (VAT) and Subcutaneous Adipose Tissue (SAT) CSAs (cm^2) were evaluated with CT scan at **baseline**.	**BMI:** VAT: r_s = 0.68, p<0.001* SAT: r_s = 0.71, p<0.001*	NR	NR	NR	Strong correlations between BMI and VAT were observed amongst smokers with COPD.
Gaisi (2015)	Prospective cohort study with Epicardial Adipose Tissue (EAT) and Thoracic Adipose Tissue (TAT) evaluated with CT scan at **baseline.**	**BMI:** EAT: r_s = 0.52, p<0.001* TAT: r_s = 0.61, p<0.001*	NR	NR	NR	Both EAT and TAT were moderately associated with BMI.
Diaz (2014)	Secondary analysis of the ECLIPSE study. Subcutaneous adipose tissue (SAT) and Pectoralis Muscle Area (PMA) evaluated with CT scan at **baseline.**	**BMI (Female vs. Male)** SAT Aortic Arch r= 0.62, P<0.01* vs. r= 0.89, P<0.0001* SAT Suprasternal Notch: r=0.61, P<0.01* vs. r=0.87, P<0.0001* PMA Aortic Arch: r= 0.44, P<0.05* vs. = 0.58, P<0.0001*	NR	NR	NR	PMA and SAT at both the aortic arch and suprasternal notch are significantly correlated with BMI in both men and women with COPD.

Author (year)	CT Measure	BMI	Obstruction	Dyspnea	Exercise / 6MWD	Summary
Zagaceta (2013)	Prospective cross-sectional study. Epicardial Adipose Tissue (EAT) evaluated with CT scan.	**BMI** EAT: β = 7.8 95% (5.7 - 9.9), p<0.001** **BODE**: β = 5.9 (-1.4 - 13.3), p=0.11*	**FEV1%**: EAT: β = -0.7(-1.2 to -0.1), p=0.01 *	**mMRC:** EAT: β = 17.3 (5.4-29.1), p=0.004 *	**6MWD:** EAT: β =- 0.2 (-0.3 to -0.1), p<0.001 **	BMI, FEV1%, MMRC and 6MWD were all significant predictors of EAT when adjusted for confounders.
Furutate (2011)	Prospective cross-sectional study. Visceral Fat Area (VFA) and subcutaneous fat area (SFA) were evaluated with CT scan.	**NR**	**GOLD stage:** VFA: I, 97.2 ± 43.5; II, 107.2 ± 48L III and IV, 125.3 ± 60.5, p=0.12** SFA: I, 107.7 ± 47.2; II, 121.4 ± 49.6, III and IV, 110.0 ± 47.2, p=0.454**	**mMRC**: VFA: r = 0.252, p = 0.013*	**6MWD:** VFA: p=NS *	Increases in both VFA and SFA were positively correlated with COPD severity. VFA was positively correlated with the MMRC scale score but not with the 6MWD.

* Unadjusted for confounding variables; ** Adjusted for confounding variables

Abbreviations: BMI = Body Mass Index; BODE = Body-mass index, airflow Obstruction, Dyspnea, and Exercise; CSA = Cross-sectional Area; CT= Computed Tomography; FEV1= Forced Expiratory Volume in First Second; FVC = Forced Vital Capacity; GOLD = The Global Initiative for Chronic Obstructive Lung Disease; mMRC = Modified Medical Research Council; NR = Not Reported; NS = No Significance; 6MWT/D = Six Meter Walk Test/Distance.

Table 9S: Associations of Muscle and Adiposity Measures with Cardiovascular Risk Factors and Clinical Outcomes in Participants with COPD

Author (year)	CT Measure	Metabolic Risks			CVD	¥ Pulmonary Exacerbations	Mortality	Summary
		HTN	Diabetes	Hyper-cholesterolemia				
Attaway (2021)	Prospective cohort study. Pectoralis muscle (PM) and Erector Spinae Muscle (ESM) CSA (cm^2) were evaluated with CT scan at **baseline. Follow-up (median, 23.6 months)**.	NR	NR	NR	NR	PM: $R^2 = 0.22$ ESM: $R^2 = 0.20$	PM: $R^2 = 0.21$, event-free survival, p=0.04 by log-rank test* ESM: $R^2 = 0.22$, event-free survival, p=0.05 by log-rank test*	Reductions in PM, and not ESM CSA, were associated with composite end point of mortality based on Kaplan Meier curves. PM and ESM were weakly correlated with pulmonary exacerbations and mortality.
Ezponda (2021)	Retrospective Cohort Study. Psoas Density (PsD) and Psoas Index (PsI) were evaluated with CT scan at **baseline. Follow-up (median, 76.5 months)**	NR	NR	NR	NR	PsD: r = -0.15, p = 0.039*	PsD Area HR = 0.97(0.93 - 0.99), p=0.048** PsI HR = 0.99 (0.82 -1.19), p=0.918* ESM HR = 0.95 (0.91-0.99), p=0.006*	PsD demonstrated weak correlations with exacerbations in the past year. PsD, PsI and ESM areas were all significantly associated with all-cause mortality in COPD patients; PsD was independently associated with all-cause mortality.
Mason (2021)	Two multicenter, longitudinal, observational, cohort studies. Pectoralis muscle area (PMA) CSA (cm^2) was evaluated with CT scan **at baseline, 12- and 36 months (ECLIPSE) and baseline and 5 years (COPDGene).**	NR	NR	NR	NR	**Exacerbation (1 per year)** PMA - 1.3% (-1.9 to -0.6), p<0.001 over 3 years. [*ECLIPSE]* - 2.1% (- 2.8 to -1.2), p<0.001 over 5 years. [*COPDGene]*	NR	The rate of exacerbation over time was associated with an excess muscle area loss in COPD cohorts.

Author (year)	CT Measure	HTN	Diabetes	Hyper-cholesterolemia	CVD	¥ Pulmonary Exacerbations	Mortality	Summary
Pishgar (2021)	Secondary analysis of the MESArthritis longitudinal cohort. Subcutaneous adipose tissue (SAT), Intermuscular adipose tissue (IMAT), and Pectoralis muscle (PM) index were evaluated with CT scan **at baseline (2010-2012) with follow-up until end of 2017.**	NR	NR	NR	NR	NR	<u>High SAT Index</u> HR = 0.22 (0.12 - 0.42), p<0.001** per doubling. <u>High IMAT Index</u> HR = 1.39 (1.02 - 1.91), p =0.04** per doubling. <u>High PM Index</u> HR = 0.93 (0.38 - 2.30), p= 0.88** per doubling.	Higher SAT and PM index had lower risks of mortality, whereas a higher IMAT index was associated with a higher risk of mortality.
Zhi (2019)	Retrospective, case-control study. Muscle within T12 spine and ribs area (T12DM) CSA (cm^2**)** were evaluated with CT scan **at baseline. Follow-up (median survival** of high T12DM 214 days vs. low T12DM 32 days)**.**	NR	NR	NR	NR	NR	**<u>Mortality (In-Hospital)</u>** OR = 0.901 (0.841–0.967), p= 0.004**	T12DM CSA was shown to be an independent risk factor in predicting hospital mortality.
Coats (2018)	Secondary analysis of longitudinal cohort study from two study centers. Visceral Adipose Tissue (VAT), Subcutaneous Adipose Tissue (SCAT), Muscle CSA (cm^2) and Muscle Mean Attenuation (HU) were evaluated with CT scan at **baseline**.	<u>VAT CSA:</u> OR=1.011, (1.007-1.015), p<0.001**	<u>VAT CSA:</u> OR=1.010 (1.006-1.014), p<0.001** <u>SCAT attenuation (HU):</u> OR=1.070 (1.016–1.127) p=0.002**	NR	**Coronary Artery Disease** <u>Muscle Attenuation (HU):</u> OR=0.759 (0.662–0.869), p<0.001 **	NR	NR	Visceral adipose tissue CSA is strongly associated with hypertension and diabetes. Subcutaneous adipose and muscle attenuation are strong predictors of diabetes, and coronary artery disease, respectively.

Martin (2017)	Secondary analysis of the ECLIPSE study. Visceral Adipose Tissue (VAT) and Muscle Attenuation (MT) CSAs (cm^2) were evaluated with CT scan at **baseline, 12- and 36 months.**	NR	VAT: OR of diabetes increased with VAT, p= 0.024**	NR	Increased with MT attenuation, p=0.042**	VAT and MT attenuation p=NS **	Not significant (results not shown)	Increases in VAT is positively associated with the presence of diabetes at baseline. Similarly, increased levels of muscle attenuation are associated with cardiovascular comorbidities at baseline. CSA of VAT and MT attenuation are not associated with pulmonary exacerbations.
Martinez (2017)	Cross-sectional analysis of baseline data from the COPDGene study. Pectoralis Muscle Area (PMA) CSA (cm^2) was evaluated with CT scan at **baseline**	NR	NR	NR	NR	PMA RR = 0.40 per 1 SD PMA** [not shown]	NR	Increasing PMA is associated with a lower incidence of reported exacerbations at baseline
McDonald (2017)	ECLIPSE (training set) and COPDGene cohort studies used. Fat Free Mass Index (FFMI) ($kg.m^2$) was evaluated with CT scans at **baseline; Follow-up (median, 6.25 years COPDGene)**.	NR	NR	NR	NR	NR	**All-Cause Mortality** Low FFMI (values) HR 1.6 (1.2–1.9), p<0.001** Low FFMI (Using UK Biobank Normative Cut-Offs) HR 1.5 (1.2–1.8), p<0.001**	Decreased levels of fat free mass is significantly associated with all-cause mortality in COPD participants.
Higami (2016)	Prospective cross-sectional study. Epicardial Adipose Tissue (EAT) was evaluated with CT scan**.**	NR	NR	NR	**CVD** EAT: β= 2.64 (1.45 to 3.82), p=<0.0001**	NR	NR	Self-reported CVD is an independent predictor of EAT area.
Tanimura (2016)	Prospective observational study of COPD outpatients. Erector Spinae Muscle (ESM) and pectoralis muscles (PM) CSA (cm^2) were evaluated with CT scan at **baseline. Follow-up (median, 2,541.5 days).**	NR	NR	NR	NR	**Prior exacerbations** ESM r = -0.10, p = NS	**All-Cause Mortality** ESM HR: 0.84 (0.79-0.90), p<0.0001* HR: 0.86 (0.78–0.93); P=0.0002**	ESM is significantly associated with all-cause mortality, even upon adjusting for confounders. Prior exacerbations were not significantly associated with ESM.

Author (year)	CT Measure	HTN	Diabetes	Hyper-cholesterolemia	CVD	¥ Pulmonary Exacerbations	Mortality	Summary
Gaisi (2015)	Prospective Cohort Study. Epicardial Adipose Tissue (EAT) and Thoracic Adipose Tissue (TAT) were evaluated with CT scan at **baseline. Follow-up (median, 42.6 months).**	NR	NR	NR	**CVD Risk Factors:** EAT: rs = data not shown, p<0.001* **Cardiovascular event:** EAT: β = 1.00, (0.99-1.00),p=NS* Thoracic AT: β = 1.00, (0.99-1.00), p = NS*	NR	NR	EAT was significantly correlated with the number of CVD risk factors. No significant relationship between EAT or thoracic AT and cardiovascular events were established.
Diaz (2015)	Secondary analysis of the COPDGene study consisting of smokers with COPD. Visceral Adipose Tissue (VAT) and Subcutaneous Adipose Tissue (SAT) CSAs (cm2) were evaluated with CT scan at **baseline.**	NR	NR	NR	**MI** Upper Tertile vs. Lower for VAT OR:1.86 (1.02-3.41)	NR	NR	Increased abdominal VAT independently associated with a history of MI.
Zagaceta (2013)	Prospective cross-sectional study. Epicardial Adipose Tissue (EAT) was evaluated with CT scan**.**	**HTN treatment** EAT: β = 44 (19.8 - 68.2), p<0.001* **HTN** EAT: β = 37.9 (13.1 - 62.7), p-0.003 *	**Diabetes:** EAT: β= 29.8 (24.3 - 64.0). p=NS*	**Cholesterol treatment:** EAT: β = 14.7 (-11.1 - 40.6), p= NS * **Total Cholesterol:** EAT: β = 0.1 (20.4 - 0.2), p= NS*	NR	NR	NR	In COPD patients, hypertensive treatment and presence of hypertension were significantly associated with EAT volume, unadjusted for important confounders.
van den Borst (2012)	Observational study of those with obstructive lung disease, propensity matched to controls.	NR	NR	NR	NR	NR	**All-Cause Mortality** VFA HR: 1.13, (0.89-1.43), p=NS**	Visceral fat is strongly associated with increased risk of all-cause mortality in older individuals with obstructive lung disease.

	Visceral fat area (VFA) was evaluated with CT scan at **baseline. Follow-up (median, 9.4 years).**							
Guerri (2010)	Cross-sectional; Intercostal and abdominal muscle CSA	NR	NR	NR	NR	Fragility (≥ 4 exacerbation admissions/year) had intercostal mass 13-14% (left – right sided) lower intercostal mass than non-fragile COPD.	NR	Those with a lower muscle CSA of the intercostal muscle compartment were more likely to have frequent hospital admissions for COPD exacerbations.

* Unadjusted for confounding variables; ** Adjusted for confounding variables

Abbreviations: BMI = Body Mass Index; CSA = Cross-sectional Area; CT= Computed Tomography; CVD = Cardiovascular Disease; GOLD = Global Initiative for Chronic Obstructive Lung Disease; HTN = Hypertension; HU = Hounsfield unit; MD = Mean Difference; MT = Muscle Tissue; NR = Not Reported

¥Pulmonary Exacerbations Defined:

Attaway (2021): ≥ 2 more exacerbation in prior year or > 1 hospital admission; ***Ezponda (2021):*** exacerbations in the 1-year prior to study enrollment; ***Mason (2021):*** Increase in respiratory symptoms needing antibiotics or systemic corticosteroids with severe event defined as emergency department visit or hospitalization. ***Martin (2017):*** moderate exacerbation requiring antibiotics or systemic corticosteroids, whereas severe exacerbation needing hospitalization. ***Martinez (2017):*** increased cough, phlegm or dyspnea > 48 hours managed with antibiotics or systemic steroids in the year prior. ***Higami (2016)***: Moderate to severe exacerbations after 2-years of enrollment.