Supplementary

Figure S1: The quality evaluation and risk of bias in included studies.
Figure S2: Methodological quality graph in included studies.

<table>
<thead>
<tr>
<th>Risk of Bias</th>
<th>Patient Selection</th>
<th>Index Test</th>
<th>Reference Standard</th>
<th>Flow and Timing</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>High</td>
<td>Yellow</td>
<td>Low</td>
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<table>
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<tr>
<th>Applicability Concerns</th>
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<tbody>
<tr>
<td>High</td>
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<tr>
<td>Yellow</td>
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<td>Low</td>
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</tbody>
</table>

Figure S3: Deek’s funnel plot asymmetry test for publication bias of studies evaluating the value of DECAF for the prognosis of AECOPD.
Search Strategies

1. Pubmed

Search (((("Pulmonary Disease, Chronic Obstructive"[Mesh]) OR (((((((((((((((((COPD[Title/Abstract]) OR Chronic Obstructive Pulmonary Disease[Title/Abstract]) OR Chronic Airflow Obstructions[Title/Abstract]) OR Chronic Airflow Obstruction[Title/Abstract]) OR COAD[Title/Abstract]) OR Chronic Obstructive Airway Disease[Title/Abstract]) OR Airflow Obstruction, Chronic[Title/Abstract]) OR Airflow Obstructions, Chronic[Title/Abstract]) OR Chronic Obstructive Lung Disease[Title/Abstract]) OR Chronic obstructive lung disease[Title/Abstract])) OR obstructive lung disease[Title/Abstract])) OR emphysema[Title/Abstract]) OR bronchitis[Title/Abstract]))) AND ((DECAF score[Title/Abstract]) OR DECAF[Title/Abstract]))

2. The Cochrane Library

#1 MeSH descriptor: [undefined] explode all trees
#2 (Chronic Obstructive Lung Disease):ti,ab,kw
#3 (Chronic Obstructive Pulmonary Disease):ti,ab,kw
#4 (COPD):ti,ab,kw
#5 (COAD):ti,ab,kw
#6 (Chronic Obstructive Airway Disease):ti,ab,kw
#7 (Airflow Obstruction, Chronic):ti,ab,kw
#8 (Chronic Airflow Obstruction):ti,ab,kw
#9 (Airflow Obstructions, Chronic):ti,ab,kw
#10 (Chronic Airflow Obstructions):ti,ab,kw
#11 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10
#12 MeSH descriptor: [Lung Diseases, Obstructive] explode all trees
#13 (Pulmonary Disease, Obstructive):ti,ab,kw
#14 (Obstructive Pulmonary Diseases):ti,ab,kw
#15 (Obstructive Lung Diseases):ti,ab,kw
#16 (Obstructive Lung Disease):ti,ab,kw
#17 (Lung Disease, Obstructive):ti,ab,kw
#18 (Pulmonary Diseases, Obstructive):ti,ab,kw
#19 (Obstructive Pulmonary Disease):ti,ab,kw
#20 #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19
#21 MeSH descriptor: [Pulmonary Emphysema] explode all trees
#22 (Emphysema, Centrilobular):ti,ab,kw
#23 (Centrilobular Emphysema):ti,ab,kw
#24 (Emphysemas, Pulmonary):ti,ab,kw
#25 (Emphysema, Pulmonary):ti,ab,kw
#26 (Pulmonary Emphysemas):ti,ab,kw
#27 (Emphysema, Panlobular):ti,ab,kw
#28 (Panlobular Emphysema):ti,ab,kw
#29 (Focal Emphysema):ti,ab,kw
#30 (Emphysema, Focal):ti,ab,kw
#31 #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30
#32 MeSH descriptor: [Bronchitis, Chronic] explode all trees
#33 (Chronic Bronchitis):ti,ab,kw
#34 #32 or #33
#35 #11 or #20 or #31 or #34
#36 MeSH descriptor: [Pulmonary Disease, Chronic Obstructive] explode all trees
#37 #35 or #36
#38 (DECAF):ti,ab,kw
#39 (DECAF score):ti,ab,kw
#40 #38 or #39
#41 #37 and #40

3. Web of Science (WOS)
#1 TOPIC: (Pulmonary Disease, Chronic Obstructive) OR TOPIC: (COPD) OR TOPIC: (Chronic Obstructive Pulmonary Disease) OR TOPIC: (COAD) OR TOPIC: (Chronic Obstructive Airway Disease) OR TOPIC: (Chronic Obstructive Lung Disease) OR TOPIC: (Airflow Obstruction, Chronic) OR TOPIC: (Airflow Obstructions, Chronic) OR TOPIC: (Chronic Airflow Obstructions) OR TOPIC: (Chronic Airflow Obstruction) OR TOPIC: (Lung Diseases, Obstructive) OR TOPIC: (Lung Disease, Obstructive) OR TOPIC: (Obstructive Lung Disease) OR TOPIC: (Obstructive Lung Diseases) OR TOPIC: (Obstructive Pulmonary Disease) OR TOPIC: (Obstructive Pulmonary Disease) OR TOPIC: (Pulmonary Disease, Obstructive) OR TOPIC: (Pulmonary Diseases, Obstructive) OR TOPIC: (Bronchitis, Chronic) OR TOPIC: (Chronic Bronchitis) OR TOPIC: (Pulmonary Emphysema) OR TOPIC: (Emphysema)
#2 TOPIC: (DECAF) OR TOPIC: (DECAF score) OR TOPIC: (decaf score)
#3 #2 AND #1

4. Embase
#5 #3 AND #4
#4 decaf:ab,ti OR 'decaf score':ab,ti
#3 #1 OR #2
#2 'chronic airflow obstruction':ab,ti OR 'chronic airway obstruction':ab,ti OR 'chronic obstructive bronchitis':ab,ti OR 'chronic obstructive bronchopulmonary disease':ab,ti OR 'chronic obstructive lung disorder':ab,ti OR 'chronic obstructive pulmonary disease':ab,ti OR 'chronic obstructive pulmonary disorder':ab,ti OR 'chronic obstructive respiratory disease':ab,ti OR copd:ab,ti OR 'lung chronic obstructive disease':ab,ti OR 'lung disease, chronic obstructive':ab,ti OR 'lung diseases, obstructive':ab,ti OR 'obstructive lung disease, chronic':ab,ti OR 'obstructive pulmonary disease':ab,ti OR 'obstructive respiratory disease':ab,ti OR 'obstructive respiratory tract disease':ab,ti OR 'pulmonary disease, chronic obstructive':ab,ti OR 'pulmonary disorder, chronic
obstructive':ab,ti
#1  'chronic obstructive lung disease'/exp