Results 10,813 patients were identified (55% male, mean (SD) age 71.07 (±10.48), FEV_1%predicted 59.96% (±19.98%).

1677 deaths (15.5%) occurred during the follow-up period. Compared with individuals with a normal BMI, underweight subjects had a higher mortality risk in adjusted analysis (HR = 1.58, 95% CI = 1.31–1.88). The lowest mortality rates were in overweight subjects (HR = 0.72, 95% CI = 0.64–0.81) and very obese subjects had no significant difference (HR = 0.83, 95% CI = 0.68–1.02, p = 0.08).

The relationship between hospitalisation rate and BMI was 'U' shaped. Admission rates were highest in the underweight category where 13.3% of subjects had ≥2 admissions compared to 6.2% and 5.3% of overweight and obese subjects respectively.

A similar relationship was observed between BMI and respiratory-cause emergency department attendance. 13.9% of underweight subjects had ≥2 emergency department attendances. The lowest attendance rates were observed in overweight and obese subjects where 6.5% and 5.6% of subjects had ≥2 attendances.

Conclusions Underweight COPD patients have the highest death and hospitalisation rates, whilst being overweight or obese appears to have protective effects. There is potential for nutritional supplementation interventions in underweight COPD patients to improve outcomes, and further research into the protective effects of obesity is required.

S123 CORONARY ATHEROSCLEROSIS DETECTED AT ELECTIVE ANGIOGRAPHY IS MORE SEVERE IN PEOPLE WITH COPD THAN IN THOSE WITHOUT

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Introduction Coronary artery disease (CAD) affects 16–53% people with chronic obstructive pulmonary disease (COPD) and is the cause of death in ~25% (Smith and Wrobel. Int J COPD. 2014;9:871–888). People with COPD have both high prevalence of cardiovascular risk factors and increased systemic inflammation and oxidative stress that can drive atherosclerosis. We therefore tested the hypothesis that patients with COPD have more extensive coronary artery disease compared to those without.

Methods All patients attending for elective coronary angiography March–July 2015 were invited to take part in a cross-sectional, observational study. Participants who gave consent underwent clinical assessment and spirometry prior to the procedure. COPD was defined as FEV_1/FVC 10 pack-year smoking history. CAD burden was quantified from the angiogram using the Gensini score (Neeland *et al*. Am Heart J 2012;164:547–552). A single rater (Professor of Interventional Cardiology), blinded to clinical diagnosis, determined number and severity of lesions. Blinded repeats were performed and ratings compared to clinical reports to ensure reliability. A nonlinear score was assigned to each lesion based on severity of stenosis and a multiplier applied depending on lesion location in the coronary tree. Lesion scores were summed to derive Gensini score which was log-transformed for analysis.

Results 249 of 294 (85%) people approached took part, 46 (19%) had COPD. The Table 1 compares demographic, respiratory disease-related and cardiovascular risk factors between people with and without COPD. Gensini score was higher in COPD patients (22.5 (8.5–46.0)) than in those without (12.5 (6.0–26.8), p = 0.04), indicating greater burden of coronary atheroma. COPD patients had more circumflex lesions and tended to have more lesions in the right coronary artery and in total than those without.

Abstract S123 Table 1 Comparison of demographic, respiratory disease-related and cardiovascular risk factors between people with and without COPD

	No COPD	COPD	P value
Demographics			
Number	203	46	
Age (years)	66 ± 1	68 ± 1	0.074
Gender (n (%) male)	135 (67%)	37 (80%)	0.065
Body mass index (kg/m^2)	29.8 ± 6.9	27.7 ± 5.2	0.057
Respiratory disease-related factors			
FEV_1 % predicted	84 ± 19	68 ± 2	0.001
Recurrent chest infections (n (%))	19 (9%)	6 (13%)	0.304
High sensitivity CRP (mg/L)	2.1 (0.9–5.4)	4.3 (1.4–7.5)	0.040
Traditional cardiovascular risk factors			
Smoking status (pack years)			
–10	68%	0%	
10–40	26%	59%	
>40	6%	41%	
LDL cholesterol (mmol/l)	2.7+1.0	2.8+1.2	0.429
Systolic blood pressure (mmHg)	135+19	132+20	0.589
Diabetes (n (%))	67 (33%)	8 (17%)	0.025
Coronary artery disease burden			
Gensini score	12.5 (6.0–26.8)	22.5 (8.5–46.0)	0.040
Number of vessels affected	2.2 ± 1.0	2.4 ± 1.0	0.125
Total number of lesions	4.3 ± 2.6	5.2 ± 2.7	0.065
- Left coronary artery lesions	2.0 ± 1.2	2.1 ± 1.3	0.385
- Circumflex lesions	1.0 ± 0.8	1.3 ± 1.0	0.028
- Right coronary artery lesions	1.4 ± 1.2	1.7 ± 1.1	0.071

FEV_1, forced expiratory volume in 1 s; mMRC, *modified Medical Research Council* dyspnoea scale; CAT, COPD assessment test. Values are mean ± standard deviation, compared with independent t tests, median (interquartile range), compared with Mann-Whitney U tests, or number (%), compared with chi squared tests.

Conclusions People with COPD have more severe coronary artery disease than those without. This analysis cannot determine whether this was due to the presence of COPD or the fact that patients with CAD and COPD had much greater cigarette smoke exposure than CAD patients without COPD.

S124 THE BODE INDEX IS AN INDEPENDENT DETERMINANT OF ARTERIAL STIFFNESS IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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Introduction COPD is associated with increased cardiovascular events, independent of established risk factors. Arterial stiffness and carotid intima-media thickness (CIMT) are surrogates of cardiovascular risk and we sought to determine their relationship with COPD severity and prognosis in the ERICA (Evaluation of role of inflammation in airways disease) multi-site UK study: the