

SCENARIO

Breathless

Dr Jade Lee was reflecting on the absolute risk and relative risk of the main cardiorespiratory disorders in smokers, and the evidence for legislation on tobacco advertising and smoking in public places improving cardiorespiratory health. She was aware that much empirical evidence came from cohort studies (and needed careful interpretation, given caveats on such results). She thought about ways of explaining in simple terms the reduced relative risk of breathing complications in smokers who kicked the habit... then her surgery started with Mr Green, followed by Mrs Carlton and her daughter.

First came Mr Dara Green, in his early 50s, who had missed his bus twice in the last month because he could no longer run fast enough. His workmates at the docks told him that he could not expect much else at his age. On reflection, he realized that, despite cutting down his smoking to about 20 cigarettes per day, he had become increasingly short of breath over the last two years, and even more so in the last week. Mrs Phyllis Green had also noticed that her husband now avoided hills when walking the dog.

Although he had long since had the usual 'smoker's cough', for the last week he had started to bring up some green phlegm every day. Tired of his noisy, whistling breathing waking her at night, Mrs Green eventually persuaded him to see their GP, Dr Lee. Dr Lee was reluctant to treat Mr Green because he continued smoking (despite her advice), thinking: *"Arguably, we should not waste valuable resources on people who will not stop smoking, but then I suppose someone will mention social determinants"*. She did eventually prescribe two different inhalers. Sister Jo Moss (practice nurse) advised him how to use these. Dr Lee arranged for respiratory function (and other) tests at the local hospital:

Spirometry:

	Achieved	Predicted	% Predicted
FEV ₁	1.8 L	2.6 L	69
FVC	3.2 L	3.3 L	97
FEV ₁ /FVC	0.56	0.79	71

Chest X-ray Report: *"There are no acute changes in the lung fields but increased lung markings are noted. Both lungs look hyperinflated and the diaphragms a little flat. The heart size is normal (CTR 16/33)"*

Blood gases: pH 7.41 pCO₂ 4.7 pO₂ 8.4 BE + 6

Next came Mrs Olive Carlton, a 68 year-old woman, with her unemployed daughter Myrtle. Mrs Carlton had noticed that she was becoming more breathless on walking over the last six months, such that she could no longer walk to the shops, and avoided the stairs. Her sleep was disrupted (feeling more comfortable sleeping upright in the armchair). She had stopped smoking. Her legs had begun to swell, particularly in the morning. Myrtle eventually persuaded her mother to see Dr Lee, who told them that Mrs Carlton had heart failure needing *"treatment to take away the extra fluid"*. Myrtle thought that this had something to do with the 'heart attack' last year - and could almost feel a hyperventilation episode coming on at the term 'heart failure'.

Later, Dr Lee noted that: *"On examination, Mrs Carlton did not appear anaemic. She had a sinus tachycardia ('96 bpm' and blood pressure of 130/90 mm Hg), distended neck veins,*

equal movement of the rib cage, normal percussion, and a gallop rhythm and bilateral basal crepitations on auscultation. Her liver edge was tender. There was no ascites, but pitting oedema to the mid-calves."