

RESPIRATORY CONDITIONS NOT TO MISS

GP CME South 17.8.12

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Reasonable not to make diagnosis in primary care
?



Rare Disease Day®

Respiratory conditions not to miss

Key messages

- Asthma 1/6 adults, $\frac{1}{4}$ of children with asthma
Sx
- COPD 1/8 of >45y olds (*Pop2000*: ~100+)
- Tobacco smokers 12-30%
- Lung cancer ~ 1 /2000
- Tuberculosis 8-9/ 100000 (*Pop2000*: 0.2/y)
- Orphan lung diseases < 1 /100000 (*Pop2000*: 0.02/y)

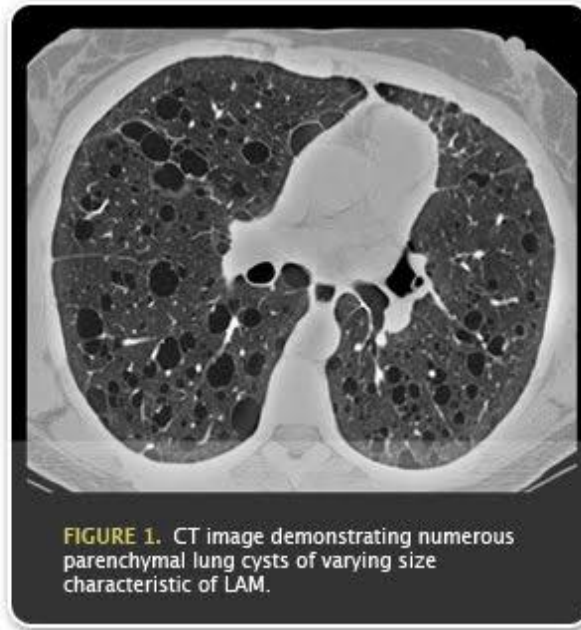
Respiratory conditions not to miss

Issues

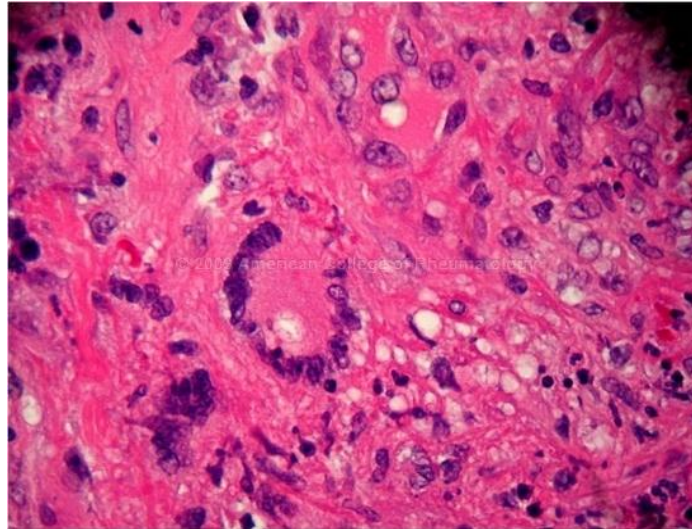
- What is “reasonable” care
- Being a “good doctor”
- Health Disability Commission “the code”
- ACC
- If not sure- question /seek advice /refer

"COPD" in 35y old non-smoking
female:

Lymphangiomyomatosis

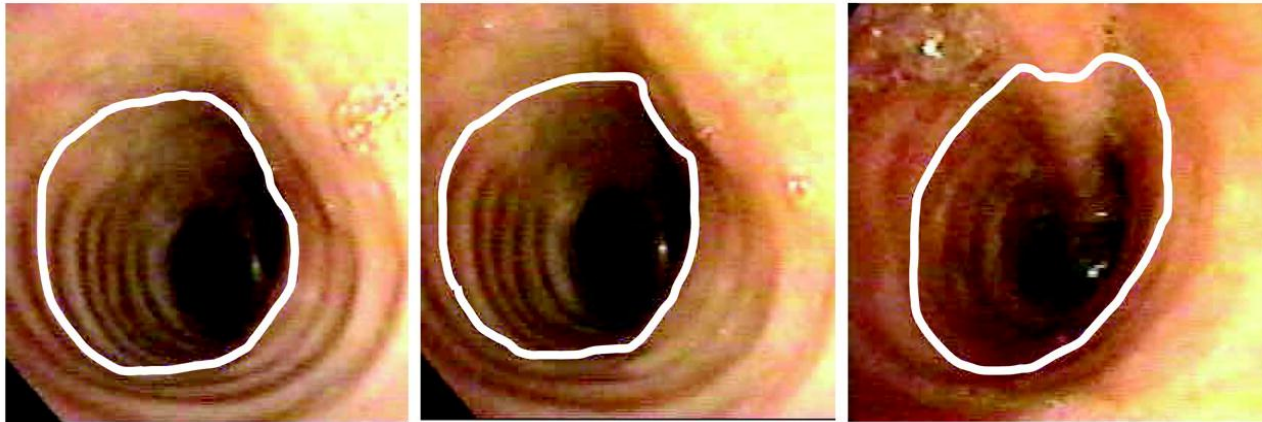


Frequent RTI with haemoptysis: Wegeners Granulomatosis



SOB and stridor, no response to inhalers: Tracheo-Broncho-Malacia

Control



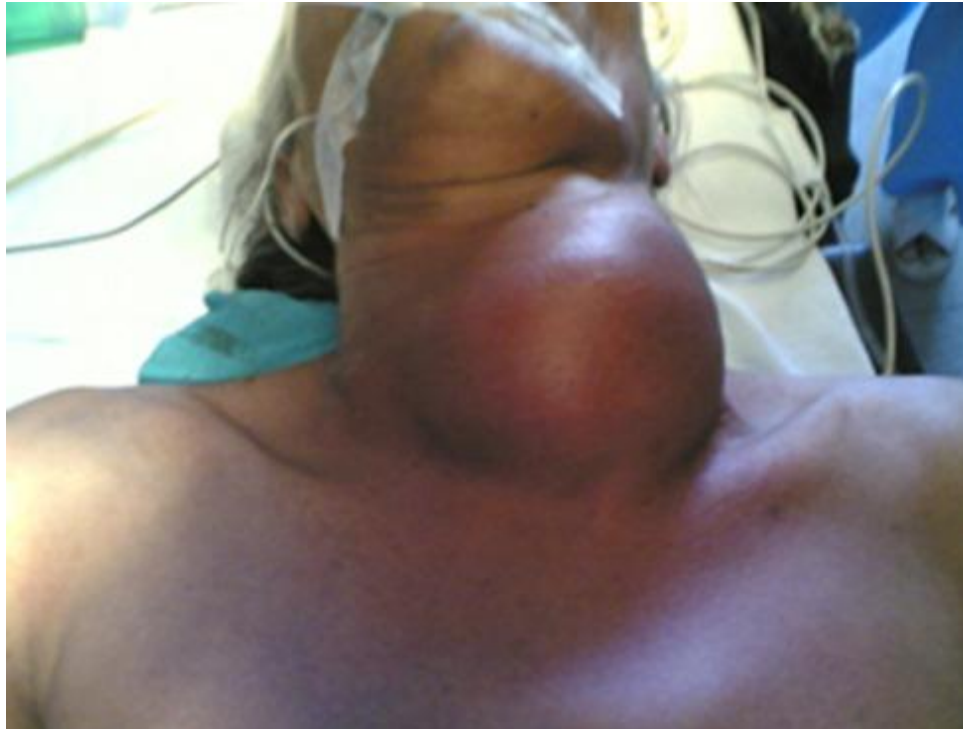
TBM



SOB and stridor, normal CXR: Large Airway obstruction



Can't be missed: Acute SOB, Stridor



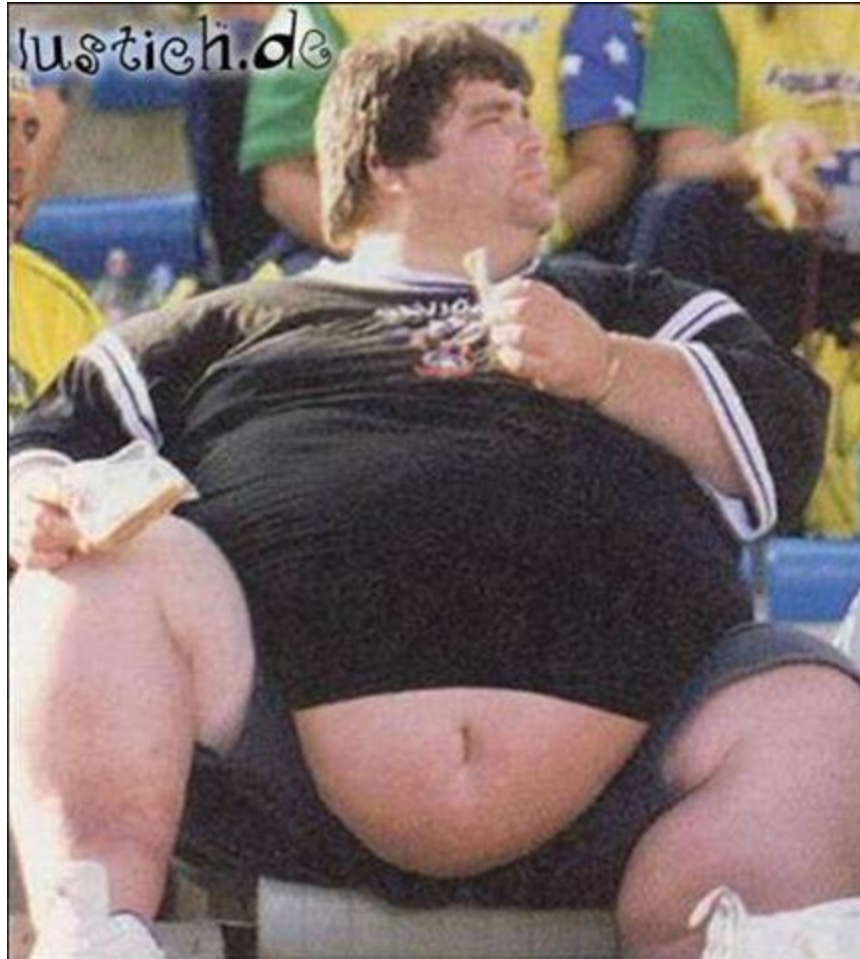
SOB ,facial swelling SVC obstruction



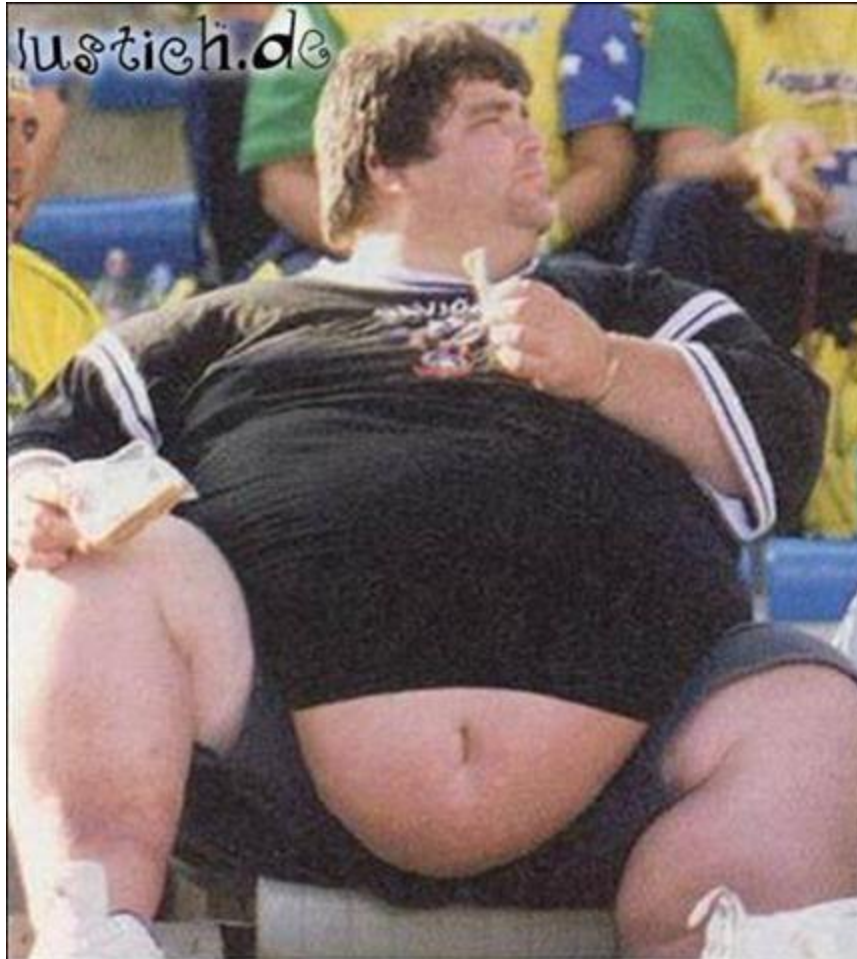
“COPD”, poor response to inhalers: Clubbing



SOB, Cough, FEV1=50%:
?Rx with LAAC

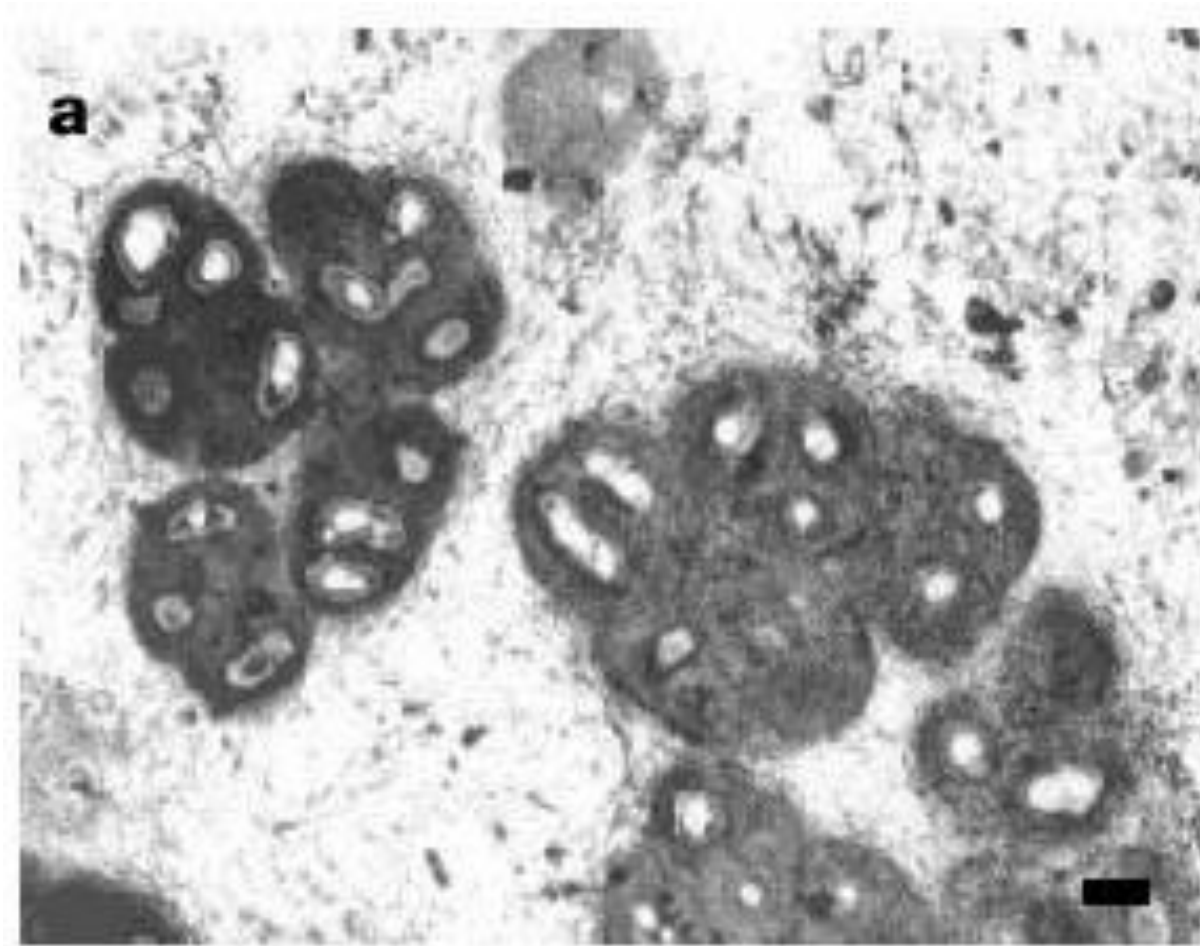


Snorer, sleepy for years

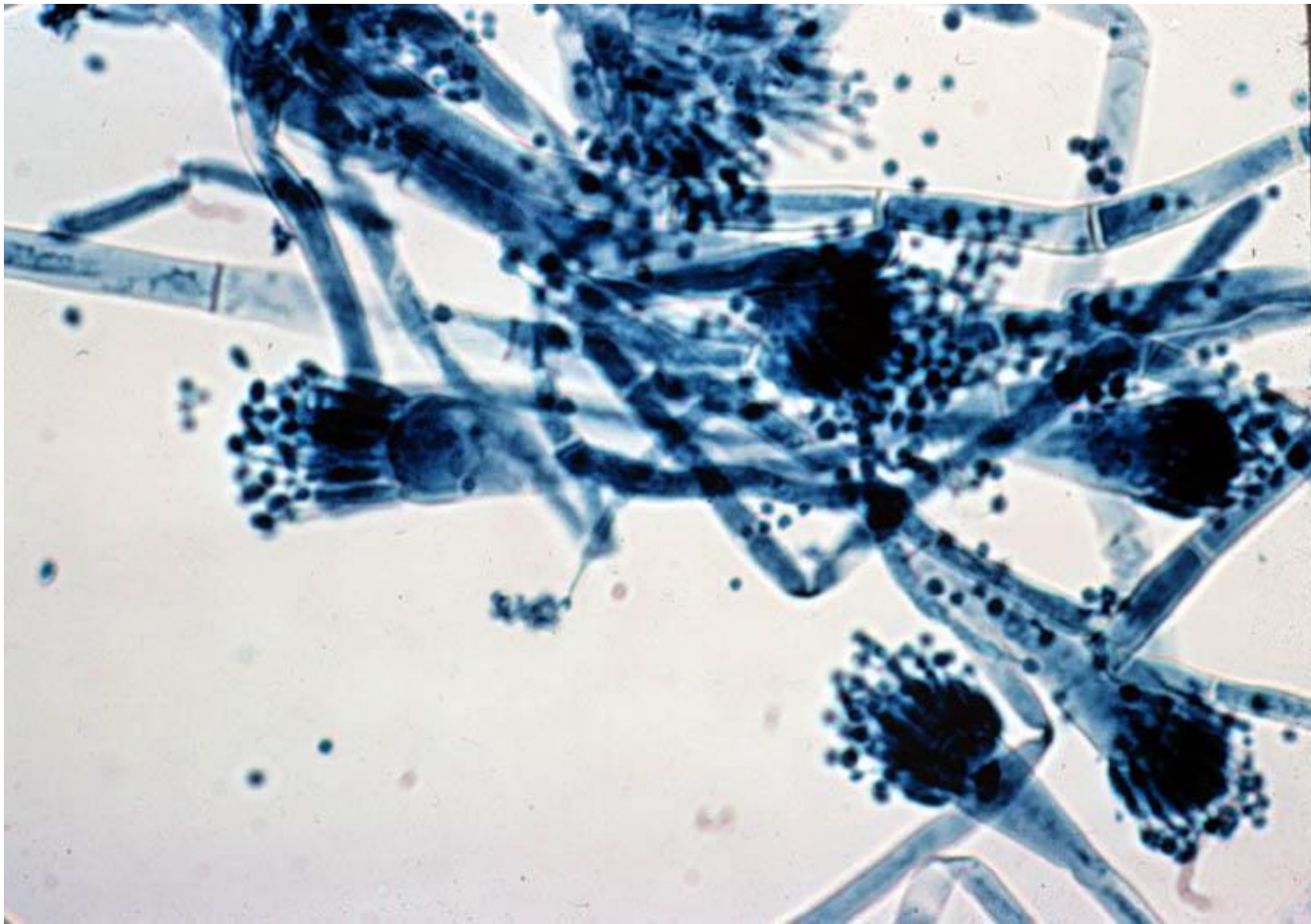


COPD: little response to several
courses of antibiotics:

Pseudomonas



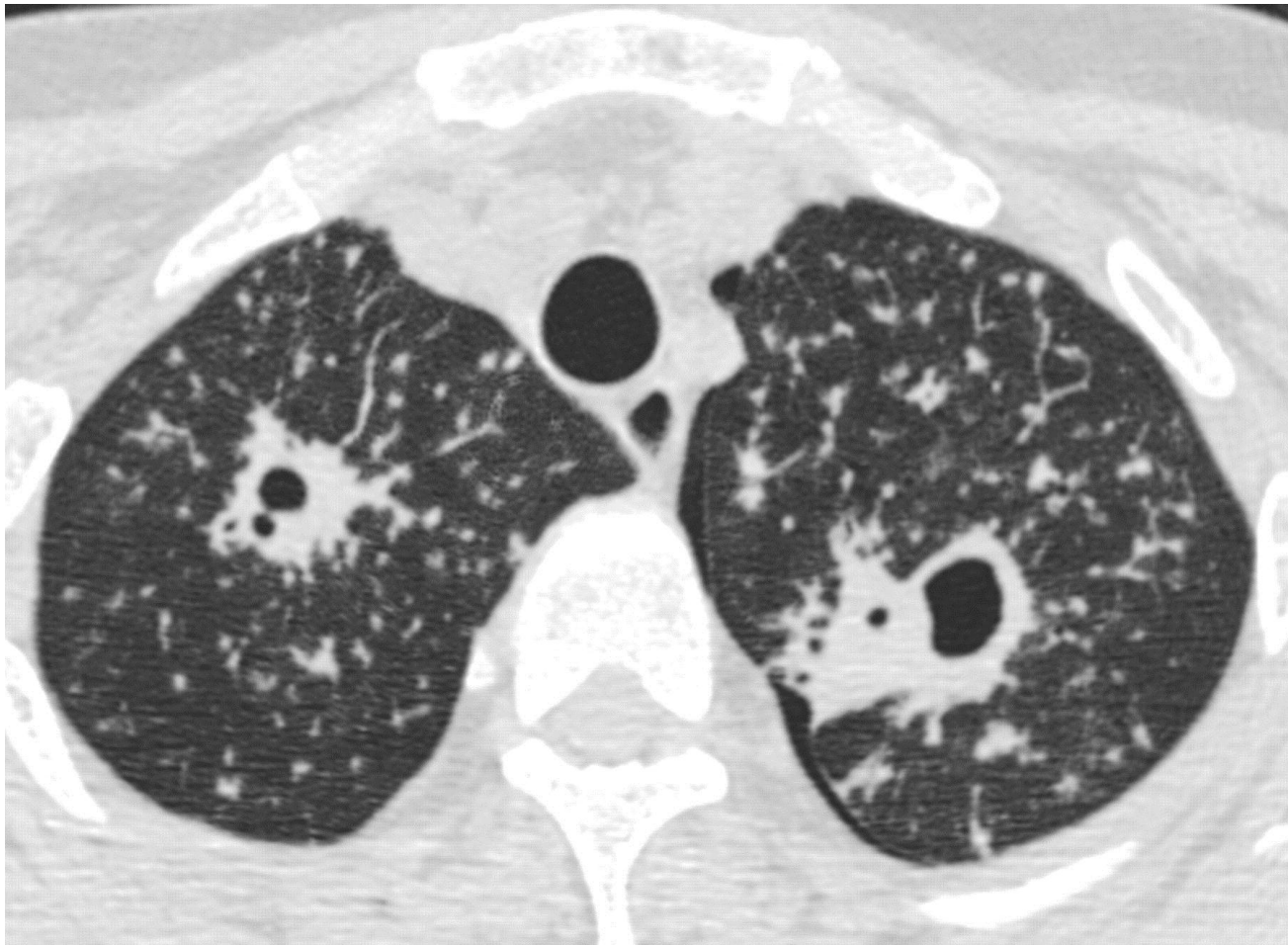
COPD: little response to several courses of antibiotics: *Aspergillus*



Failure to respond to several courses of antibiotics: TB



Tb CT: Cavitation, infiltrates



Tb in NZ

NZMJ 2008;121 25/7/2008 L Calder et al

- 14y old student , born in Korea, in NZ 4y
- Respiratory Sx since Feb 06, GP Rx Amoxil, by Aug 06: lost 9kg, unwell, productive cough
- AHS GP and CXR next day: infiltrate and pleural effusion. Admitted that day
- Sputum smear +'ve (AFB++), fully sensitive

Tb in NZ 2

NZMJ 2008;121 25/7/2008 L Calder et al

- Household / close contacts=15: 2 Tb (*same DNA*), 12 LTBI
- School -level2 >5h/week= 116: 6 Tb (*3 culture+'ve*) , 56 LTBI
- School -level3 <5h/week = 228: 2 Tb, 55 LTBI
- School -no known contact = 1325: 5 Tb, 108 LTBI
- 232 of 235 LTBI cases treated (4RH2) , 227 completed
- Cost=279,481\$ (131K public health)

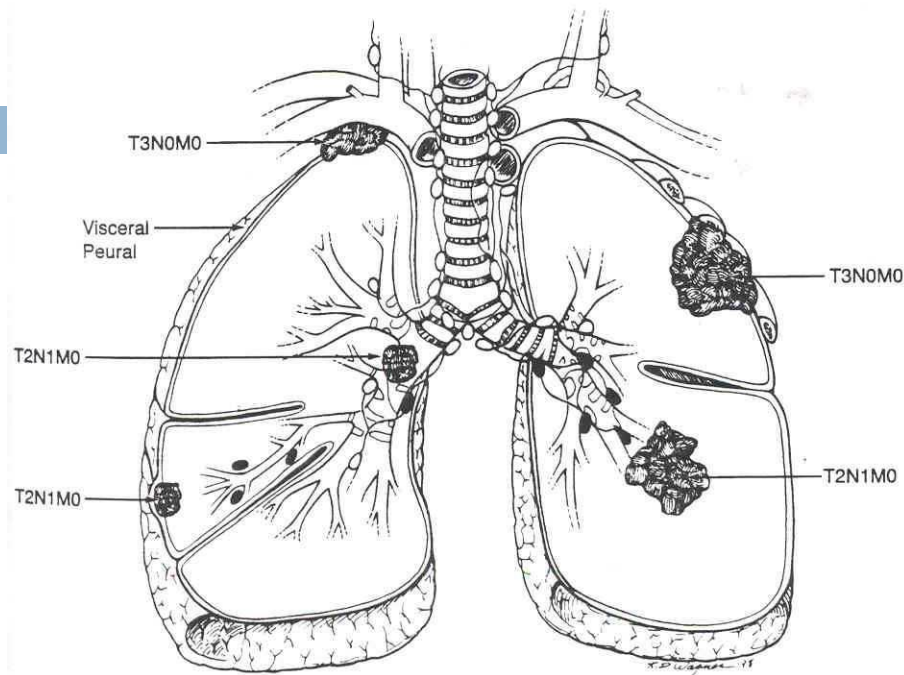


FIGURE 32.4. Stage IIB (*T2N1M0* and *T3N0M0*) lung cancer includes (1) tumors larger than 3 cm., or with other T2 characteristics, that involve peribronchial and/or hilar lymph nodes by direct extension or metastasis. No further lymph node or distant metastasis is present, and (2) tumors with limited, circumscribed, extrapulmonary extension, T3, such as peripheral tumors invading the chest wall or central tumors involving the pericardium, with no evidence of metastasis. (From Mountain CF, Libshitz HI, Hermes KE. Lung cancer—handbook for staging, imaging, and lymph node classification. Houston: Clifton F. Mountain Foundation, 1999, with permission.)

HDC Case 10HDC00610

- This report is about the **failure of Dr B to diagnose lung cancer** in his patient, Ms A, aged 52 years.
- On 26 February 2010, Ms A called Healthline for advice as the pain in her chest was unbearable. Healthline immediately sent Ms A an ambulance which transported her to hospital.
- A CT scan and lung biopsy confirmed 1° lung cancer with extensive 2° in liver, lung and mediastinum. Ms A was referred to palliative care and died several months later

HDC Case 10HDC00610

- Between June 2008 and February 2010, Ms A presented to Dr B on multiple occasions with complaints of persistent coughing, chest and throat pain, fever and sweating, haemoptysis, and SOB
- At the very least, Dr B should have physically examined Ms A and referred her for an urgent chest X-ray in May 2009. By failing to do so, Dr B breached Ms A's rights under Right 4(1)6 and Right 4(4)7 of the Code of Health and Disability Services Consumers' Rights (the Code).

HDC Case 10HDC00610

- Dr C found Ms A had crepitations on the R side of her chest and pleural rub. Dr C advised HDC that the pleural rub, together with the localised and severe nature of the pain, led him to the diagnosis of pleurisy. Accordingly, he prescribed Augmentin and arranged for Ms A to see Dr B
- Dr C further advised, that he was confident of the diagnosis and therefore did not consider referring Ms A for a chest X-ray at that time.
- Ms A attended her follow-up appointment with Dr B
- At a consultation on 20 August 2009, Dr B told Ms A to —find another doctor.

ACC “Misadventure”= (now) treatment injury: CXR report not followed, not just 1° care

- 50y smoker hospital admission with pneumonia 5/06
- FU CXR requested by hospital 7/06, “*to be FU by GP*” - abnormal, not acted upon
- 7/08 : disseminated NSCLC
- Died Jan 09

Suspected Cancer in 1^oCare NZ guidelines NZGG /MoH 2009

- A person presenting with Sx /signs suggestive of LC requires urgent Ix which may include referral to a specialist team “
- A person should be referred urgently to a specialist if they have: persistent haemoptysis and are (ex)smokers >40y; or if a CXR is suggestive of LC (Grade C)
- A person should be referred urgently for a CXR if they have unexplained haemoptysis or unexplained /persisting resp signs /Sx (chest/shoulder pain, SOB, weight loss, focal chest signs, hoarseness, clubbing, ,cervical Lnd, cough, features of metastasis- Risk in (ex)smokers, previous asbestos exposure, Hx of cancer – head /neck)

Suspected Cancer in 1^oCare

NZ guidelines 2009-(2)

- **“Good practice points “** (*opinion of the GL team or feedback from consultation within NZ where no evidence is available*):
- Smoking status should be recorded and regularly updated
- After urgent referral for CXR , the CXR should be completed and reported within 1 week
- A person with risk factors for LC who has consolidation on an initial CXR should have a repeat CXR within 6 weeks to confirm resolution
- Sputum cytology is not recommended for the Ix of LC

Mrs A FSA “COPD + “Anxiety”

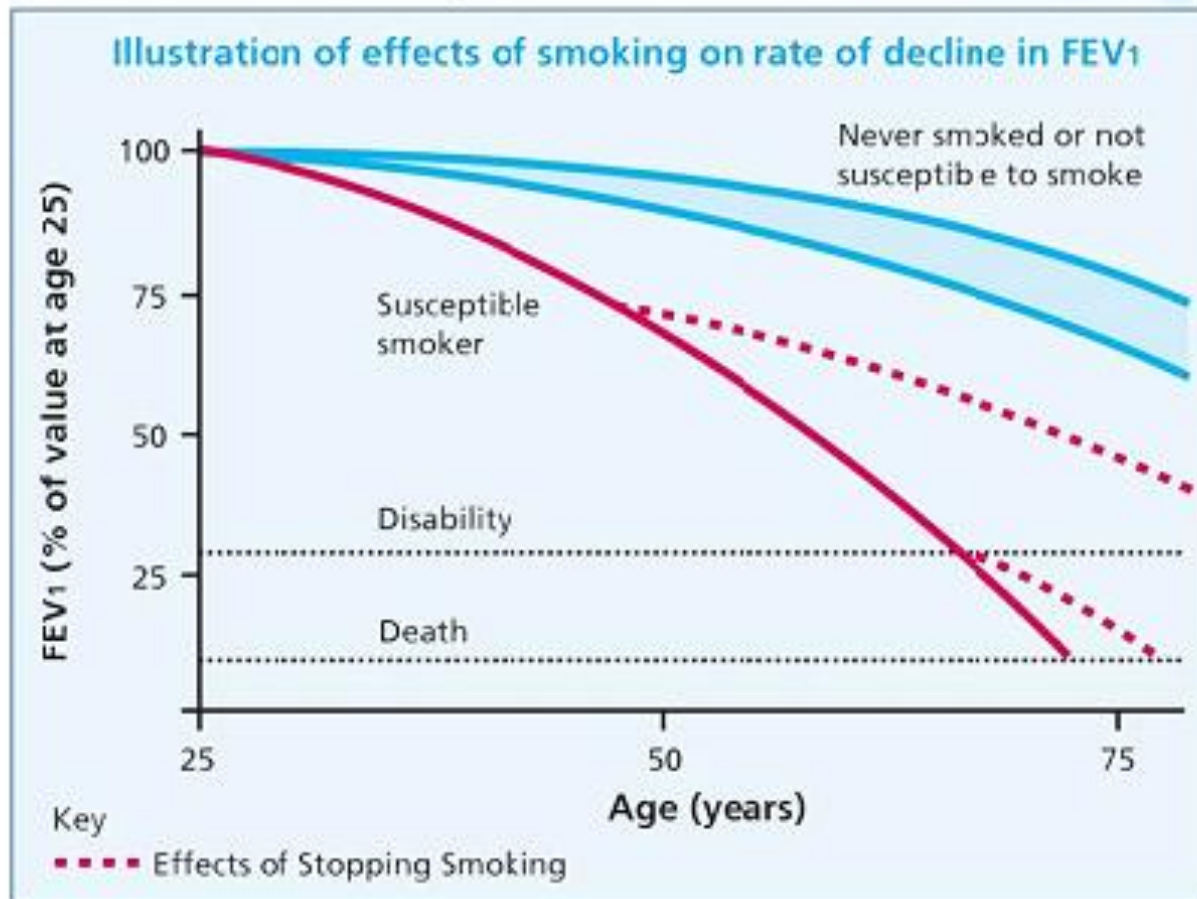
- Age 52 hospitalised with pneumonia
- Quit smoking
- COPD Dx : Rx ICS/LABA, Combivent
- Age 59 referred for hospital Spiro:
FEV1=0.46L =21% predicted
- Frequent RTI , antibiotics do not help
- Age 60 increasing anxiety and panic, Rx lorazepam

Mrs A FSA Type 2 Respiratory Failure

- Age 61 referred to respiratory CNS who then referred for Respiratory FSA
- Now: Housebound, ankle oedema , 5 kg weight loss in 1y
- Sputum *Pseudomonas aeruginosa*
- FEV1=0.39L =18%
- SatO2=76%, PaO2=43, PaCO2=57
- Echo : PAHT

Early Dx, earlier Rx

- The Fletcher-Peto Diagram



Mrs B- COPD, nicotine addiction

- Age 38 “pneumonia”, nothing else “wrong”
- Age 40-50 worsening SOB- SB different GPs for “Flu” each year –still smoking , requesting CXR
- CXR age 49: “Hyperinflated lung fields, otherwise unremarkable”
- Age 51 SB surgical service : weight loss – no cause found

Mrs B- COPD, nicotine addiction

- CT Thorax : "Emphysematous change only"
- No further action
- 1y later GP referred US / barium swallow : "weight loss" - normal
- Referred to Respiratory CNS by practice nurse, CNS referred for Respiratory FSA
- BMI=16, can walk 100m, FEV1=0.43L=15%

Bullous emphysema



Very Severe Obstruction

Age (yr): 51 Height (cm) 168 Mass (kg): 84.6 Body Mass Index: 29.97 Gender: Female

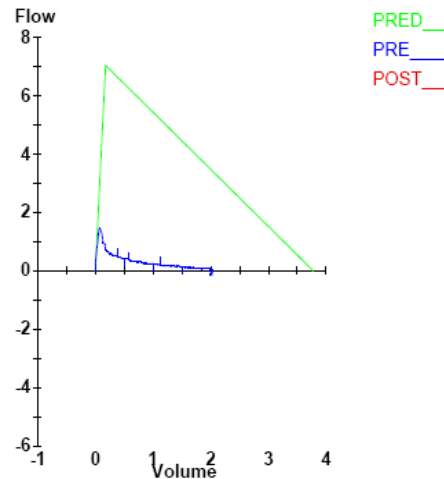


Spirometry

(Ref: Hankinson)

	Measured	Units	Ref Range	%Ref	Post	% Change
FEV1	** 0.61	Litres	2.39 - 3.59	** 20		
FVC	** 2.04	Litres	3.05 - 4.52	** 54		
FEV1/FVC	** 30	%	70 - 90			
FEF25-75%	** 0.22	L/sec	1.53 - 4.17	** 8		
PEF	** 1.60	L/sec	5.21 - 8.86	** 23		
FET100%	11.82	Sec	> 6 Sec			
FEV6	** 1.60	Litres	2.96 - 4.36	** 44		
FEV1/FEV6	** 38	%	73 - 91			
StdFEF25-75	** 0.29	L/sec	1.66 - 4.39	** 10		

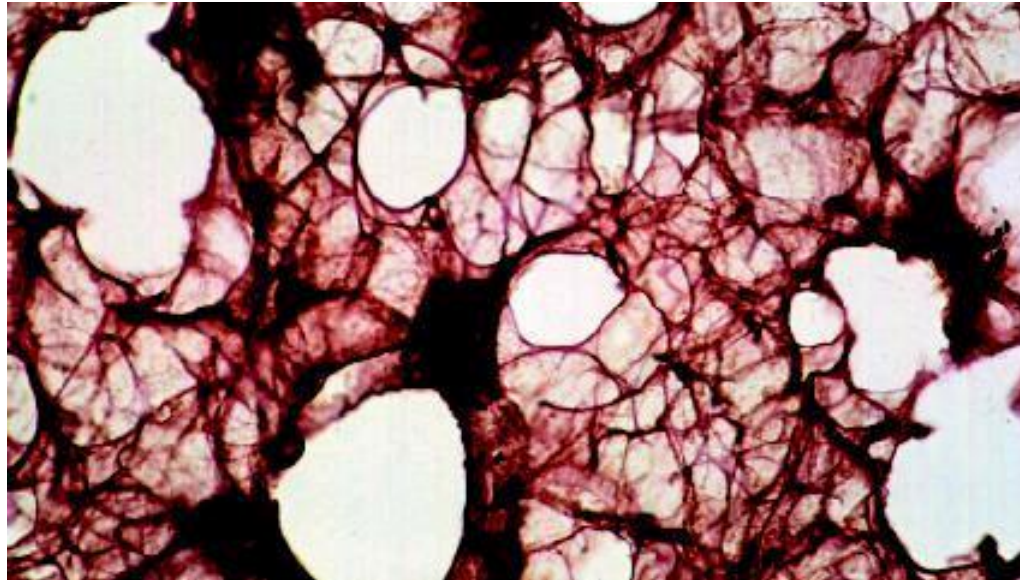
Results reported at BTPS



(Fletcher & Peto BMJ 1977, Framingham data 2009)



Emphysema = Lung destruction is gradual = many years



COPD phenotypes

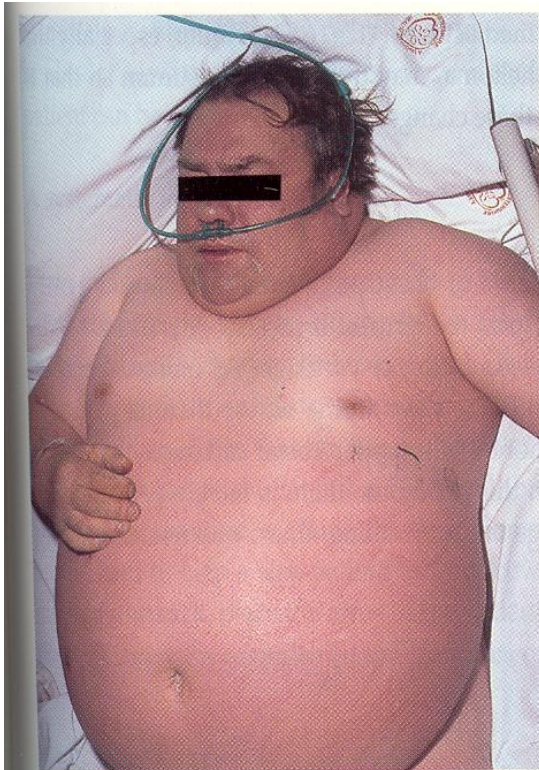


Fig. 6.48 A 'blue bloater' showing ascites from marked cor pulmonale.

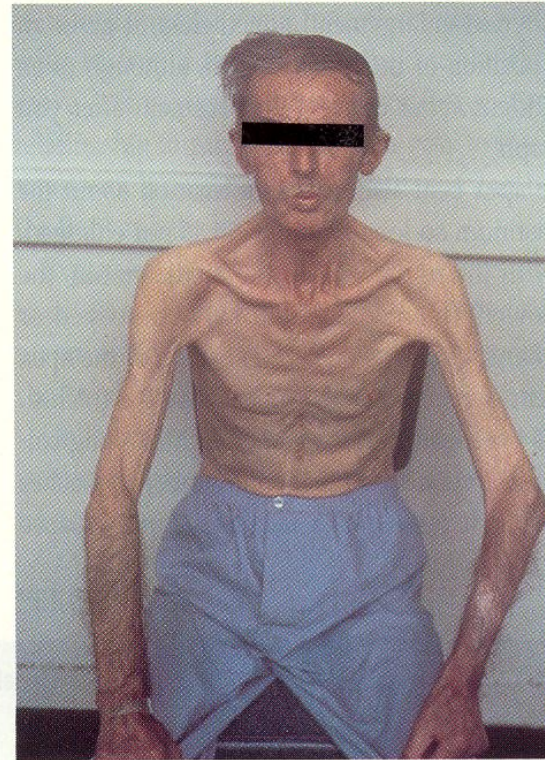


Fig. 6.49 The 'pink puffer'. Note the pursed-lip breathing.

Blue smoke now



Underdiagnosis of COPD

Diagnosed
COPD
2.4 - 7 million

Estimated total
COPD
16 million

56 - 85%
Undiagnosed/misdiagnosed

53y truck driver : type 2 diabetes

- IDDM years (135U/d), GP visits 4/y, Hospital OP 2/y
- BMI=41, retinopathy
- HBP “hard to treat” : 1, 2 , 3 then 4 agents
- Struggling to keep awake for years, snorer >25y, apnea> 10y, ESS=17/24
- Sleep study: AHI=75.9/h, O2Sat <90% 40% of the time, nadir 60%
- CPAP titration night: “best sleep for a long time”

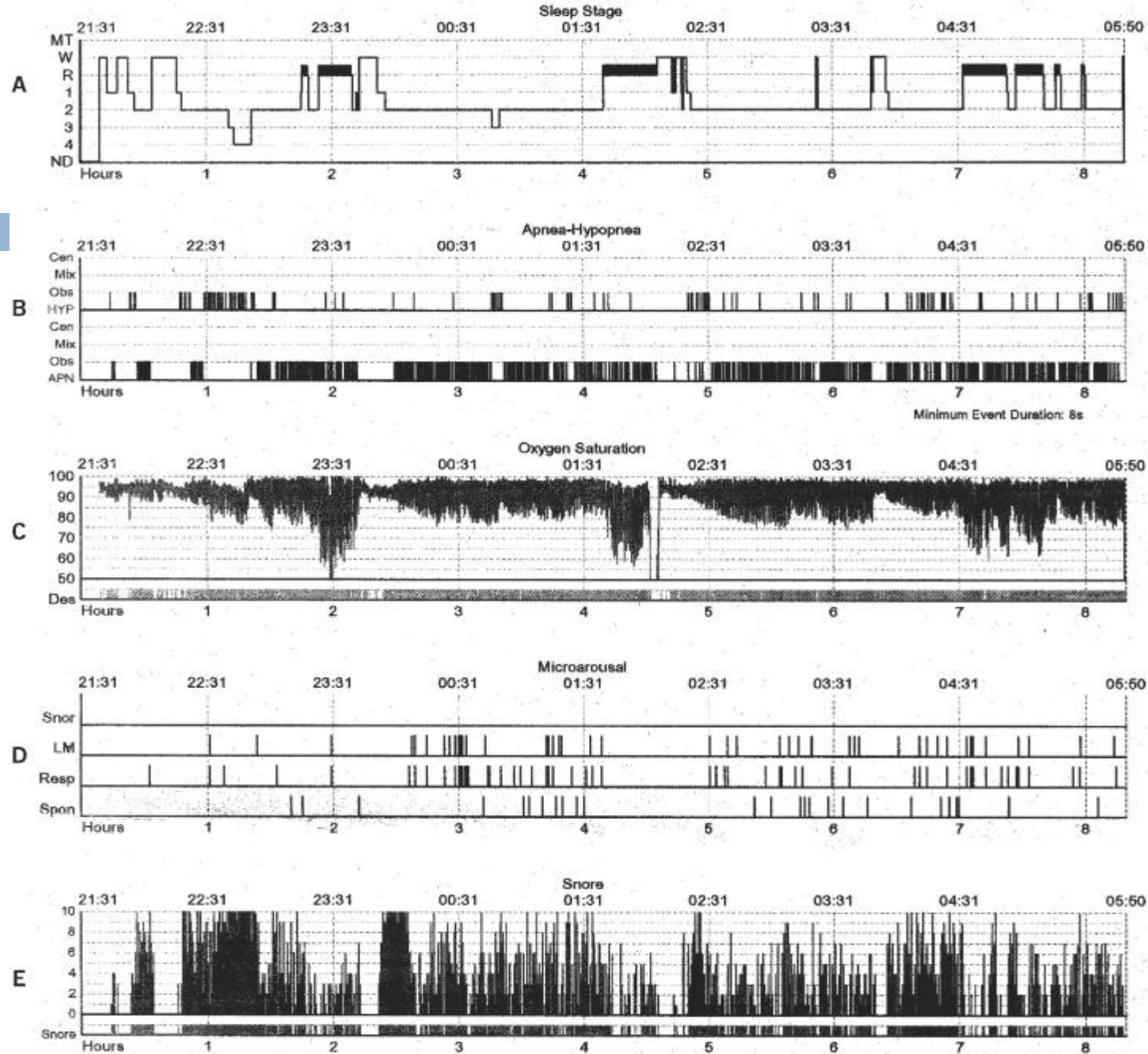


Fig. 1 – Example of a compressed overnight polysomnographic graph in a patient with marked obstructive sleep apnea. A) hypnogram; B) apneic and hypopneic events; C) frequent events with marked drops in oxyhemoglobin saturation; D) microarousals (sleep fragmentation); E) loud and frequent snoring

36y Sales manager

- Snorer ++ since teens, apnea > 10y
- UPPP+ ENT op 24y:but not resolved
- Now (=years), always “*buggered*” , “*too tired*” to exercise
- BMI=45, Wt+50kg since 2000
- Drives 1,500km /wk. Red Bull™ ++ to stay awake

36y Sales manager

- 8 1/2h of “bed time” but wakes up 10-20x
- ESS=17/24
- Sleep study: AHI=97.4/h, O2Sat<90% for 69%,nadir 62%
- CPAP : after 2months ESS=8, av. usage 7.4h/night, subj much better

OSA(S): Key messages

- Look out for it: Key questions to ask (*BMI, snoring, apnea, unrefreshing sleep, “semi-quantified” daytime hypersomnolence, “refractory” BP.....*)
- Need a sleep study if suspected
- Severe OSA: on average it takes 7y to Dx
- CPAP effective but limitations- only splint
- Significant weight loss may cure

The signs

- Clubbing (*not COPD! lung cancer, bronchiectasis..*
- Oedema (*DDx, decompensation of RVF..*
- Crackles (*not COPD, ? ILD..*
- Hypoxaemia /exertional desaturation –
Oximetry as “vital sign” (? PAHT..
- Weight

The symptoms

- Need to match one's diagnosis
- Never assume ,question the Dx if it does not add up
- Regular review to assess for additional diagnoses

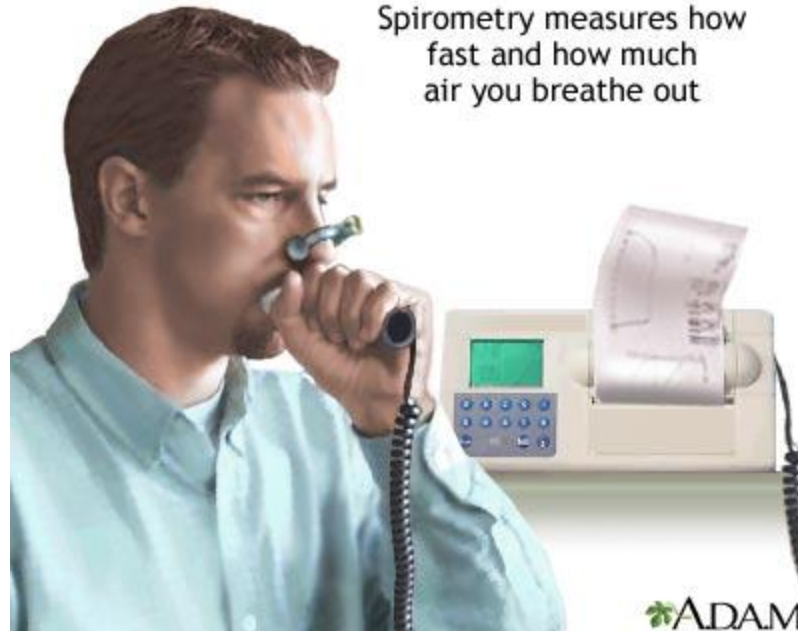
COPD Screening “Mini-spirometry”



Not common enough: Spirometry tests



Spirometry measures how fast and how much air you breathe out



COPD-X Checklist

Diagnosis and Management of COPD

C – Confirm diagnosis

Presence and history of symptoms:

- ☐ Shortness of breath
- ☐ Cough
- ☐ Sputum production

Smoking – history and willingness to quit:

- ☐ Smoker ☐ Packyears ☐ high ☐ medium ☐ low
- Willingness to quit ☐ high ☐ medium ☐ low
- ☐ Previous smoker
- ☐ Non-smoker
- ☐ Other smoking-related disease

Spirometry - measure FEV₁ and FEV₁/FVC and assess reversibility of airflow limitation

Spirometry is essential for case-finding, to differentiate between asthma and COPD, and to determine the degree of disease severity.

Anyone who smokes and/or has shortness of breath and sputum production could have COPD

Grade COPD severity

Based on spirometry results – FEV₁ % of predicted post-bronchodilation

60–80% = Mild
40–59% = Moderate
≤39% = Severe

	Pre-bronchodilator	% pred	Post-bronchodilator	Reversibility* (%)
FEV ₁				
FVC				
FEV ₁ /FVC				

COPD is defined as post-bronchodilator FEV₁/FVC <0.70 and FEV₁ <80% predicted.

A 47 year old smoker is admitted to ED 4 time in 6 months

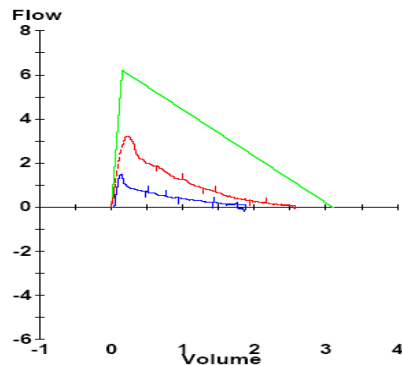
Age: 47 Height(cm): 152 Weight(kg): 59.0 Body Mass Index: 25.54 Gender: Female



Spirometry

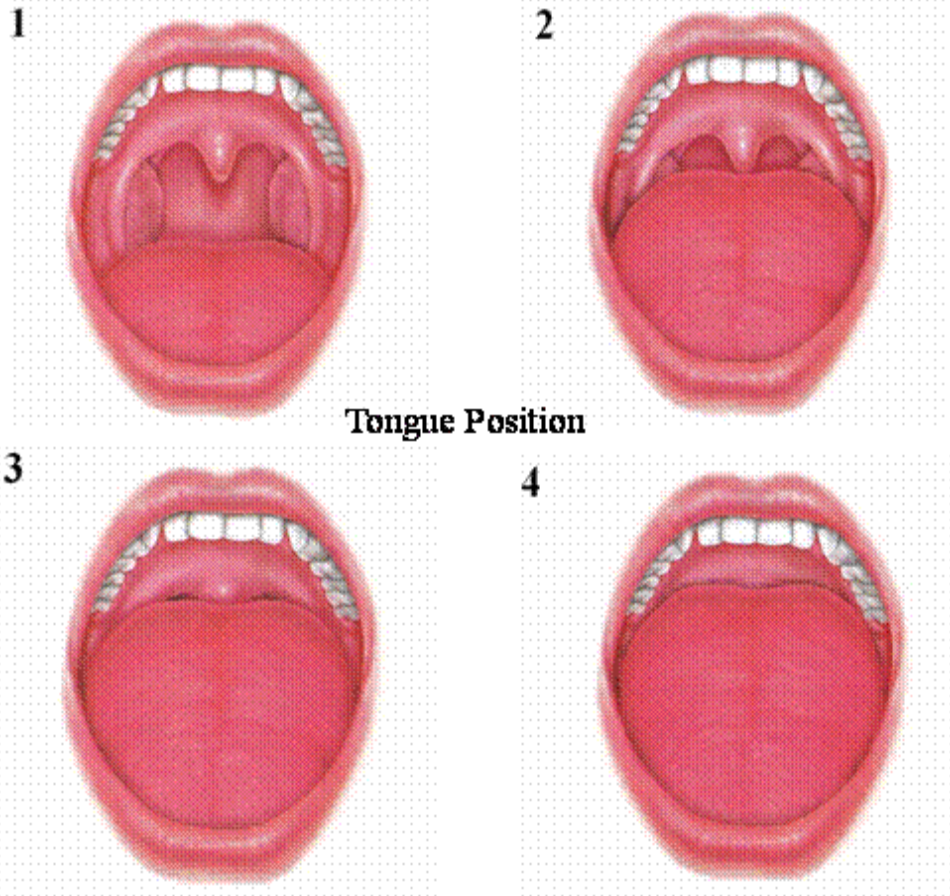
(BTPS, Ref: Hankinson/Polgar)

		REF	PRE-Rx		POST-Rx		90%C.I.
			Meas	%REF	Meas	%Chg	
FEV1	Liters	2.50	** 0.77	** 31	** 1.45	88	0.49
FVC	Liters	3.10	** 1.93	** 62	2.58	34	0.60
FEV1/FVC	%	81	** 40		** 56		10
FEV6	Liters	3.00	** 1.87	** 63	2.53	35	0.58
FEV1/FEV6	%	83	** 41		** 57		9
FEF25-75%	L/sec	2.64	** 0.39	** 15	** 0.72	82	1.08
StdFEF25-75%	L/sec	2.71	** 0.40	** 15	** 0.76	89	1.11
PEF	L/sec	6.21	** 1.49	** 24	** 3.24	117	1.50
FET100%	Sec		9.05		8.19	-9	
FVL ECode			000000		000000		



PRED PRE POST
Medication: SALBUTAMOL

Snoring + Sleepiness



OSA upper airway



Normal Breathing

- Airway is open
- Air flows freely to lungs



Obstructive Sleep Apnea

- Airway collapses
- Blocked air flow to lungs