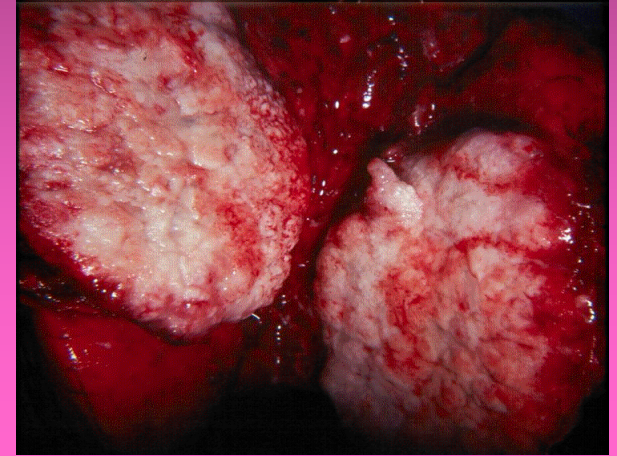
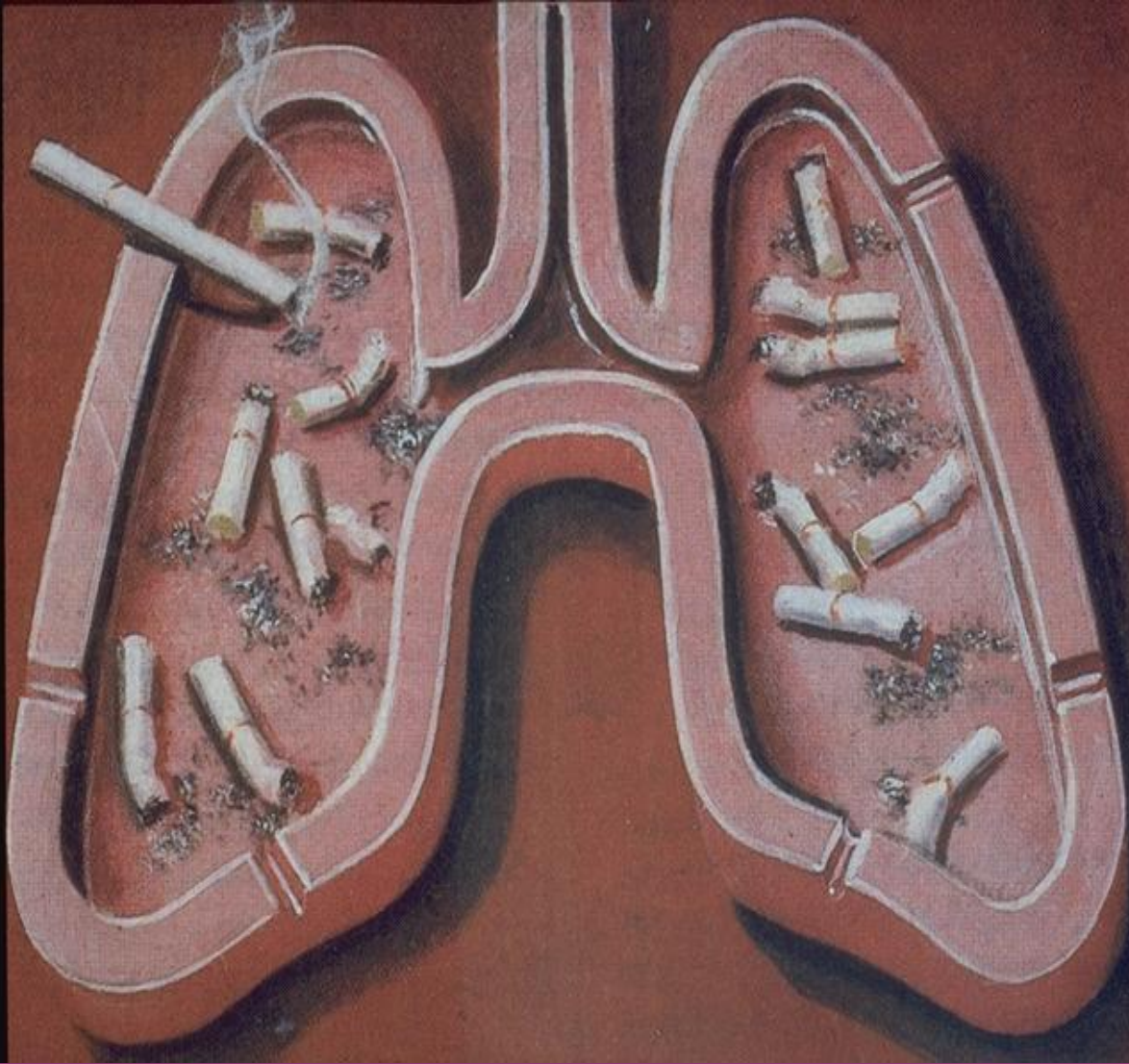


Lung cancer



Finn Rasmussen

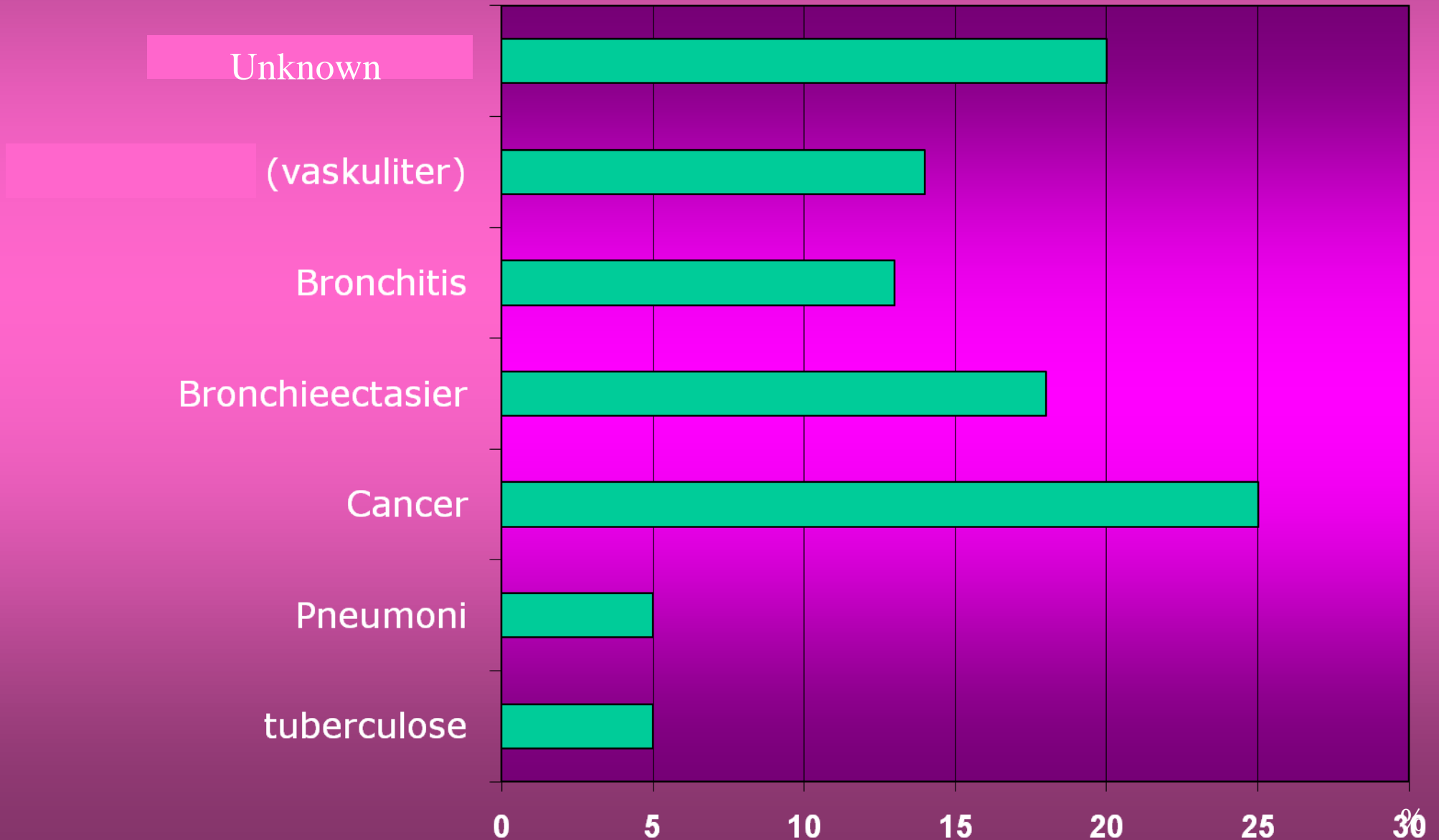
Case

Easy warm up

- 65 years old male, for some years increasing dyspnoea. Diagnosed with COPD. Slight bloodstain in the sputum in the morning. Lost 6 kg in 3 months. Disturbances and pain in right arm.
- What is really disturbing you ?
- Further work-up ?

Best guess of diagnosis ?

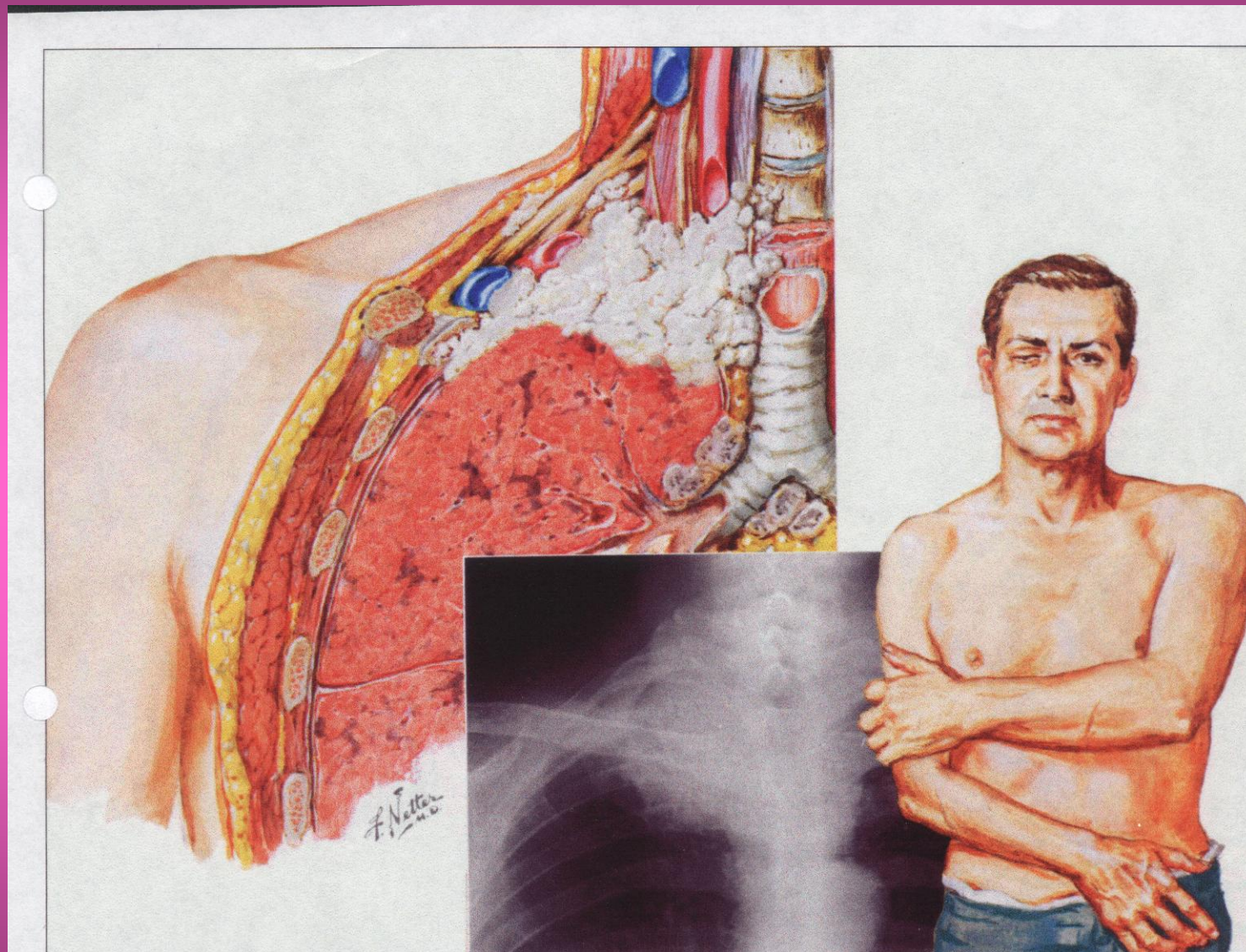
Causes of Hemoptysis

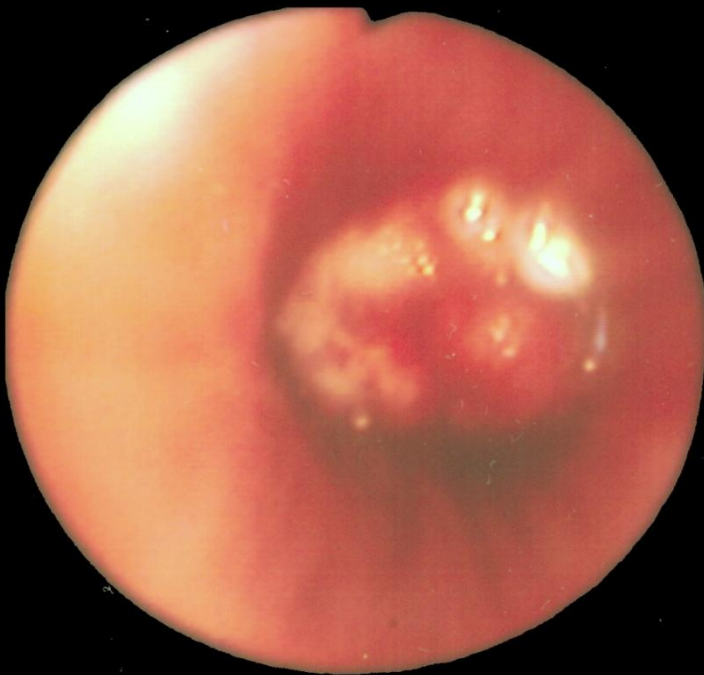
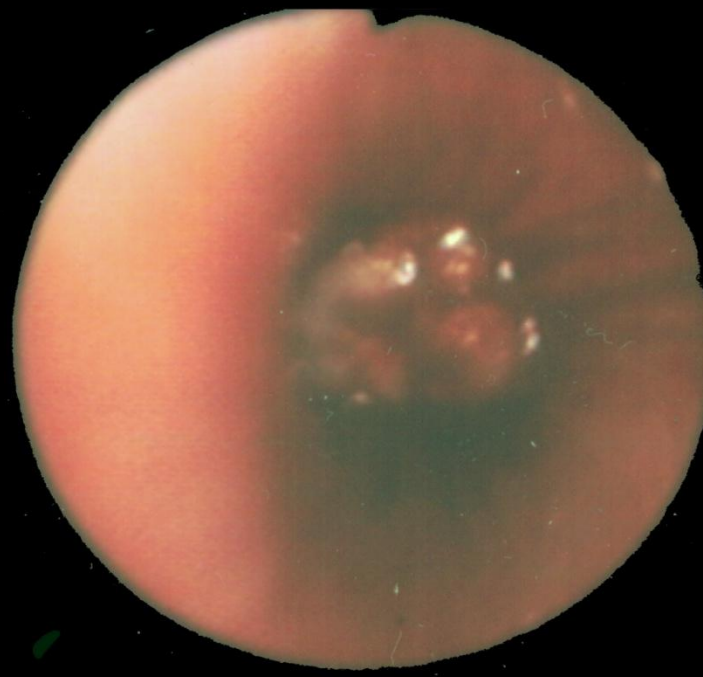


Symptoms in patients that later turn out to have lung cancer

Symptoms and signs of lung cancer	prevalence (%)
Cough	8-75
Weight loss	0-68
Dyspnoea	3-60
Chest pain	20-49
Haemoptysis	6-35
Bone pains	6-25
Clopping	0-20
Fever	0-20
Tiredness	0-10
Swallowing problems	0-2
Wheeze	0-2

Again great variation in symptoms !
But not all are equally important !!!

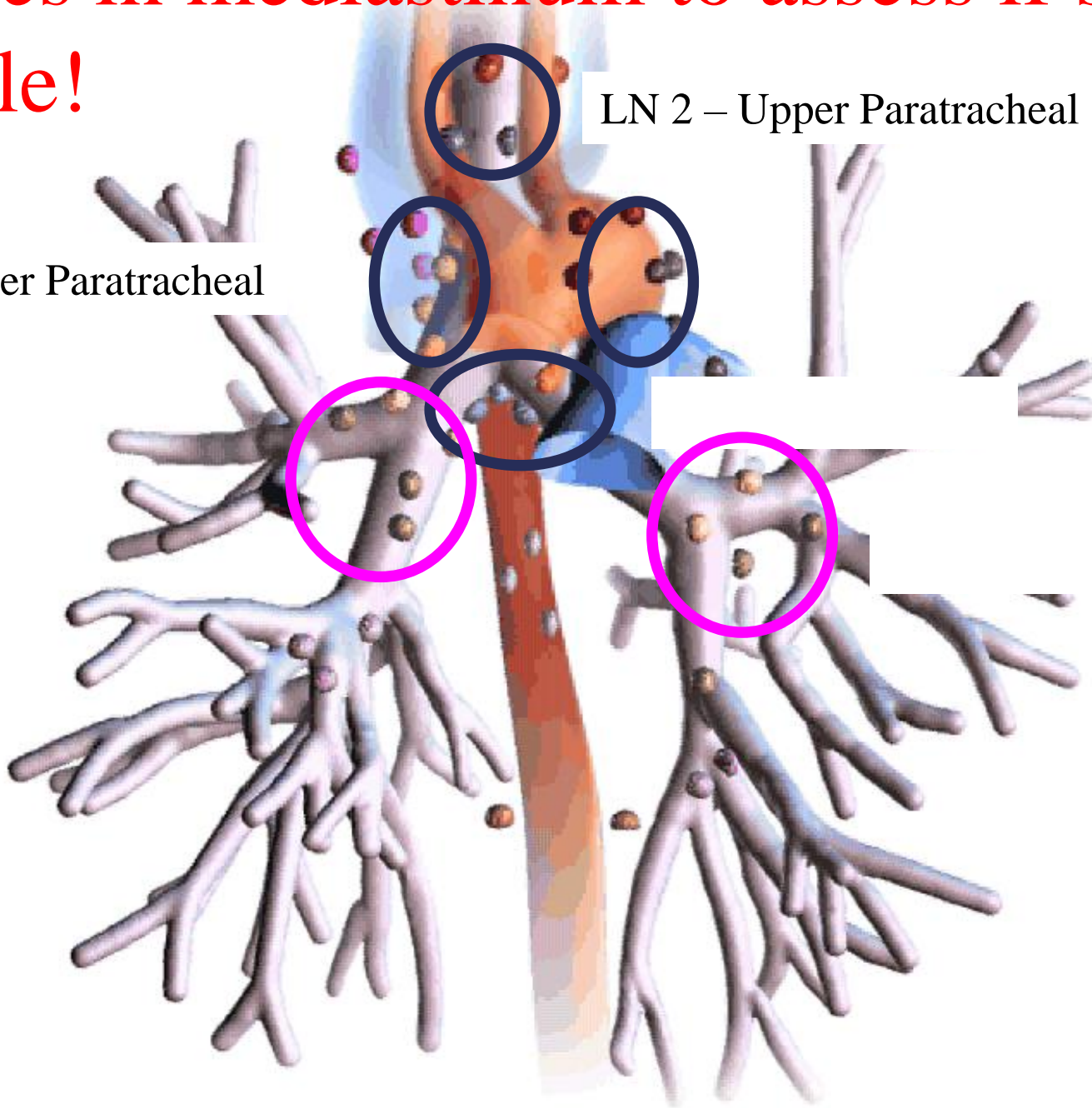




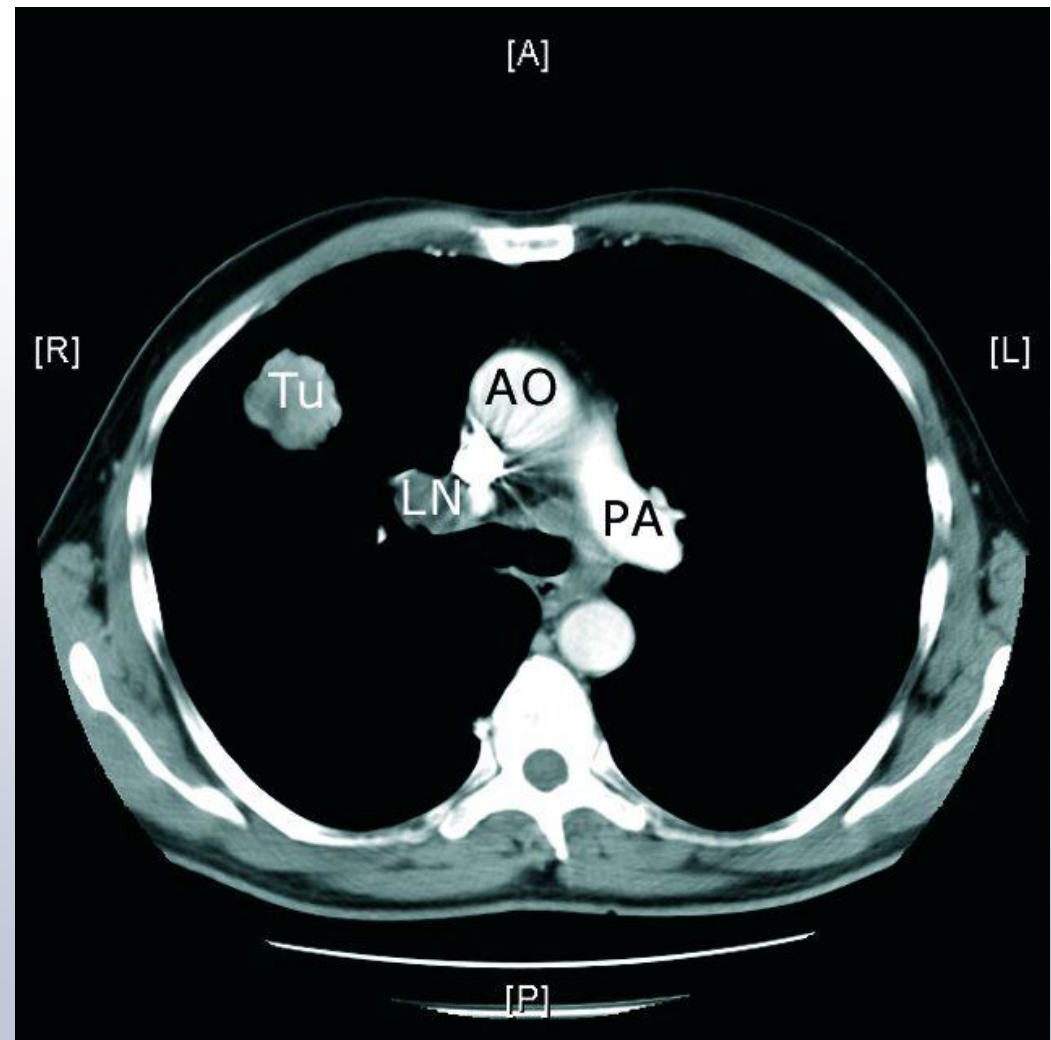
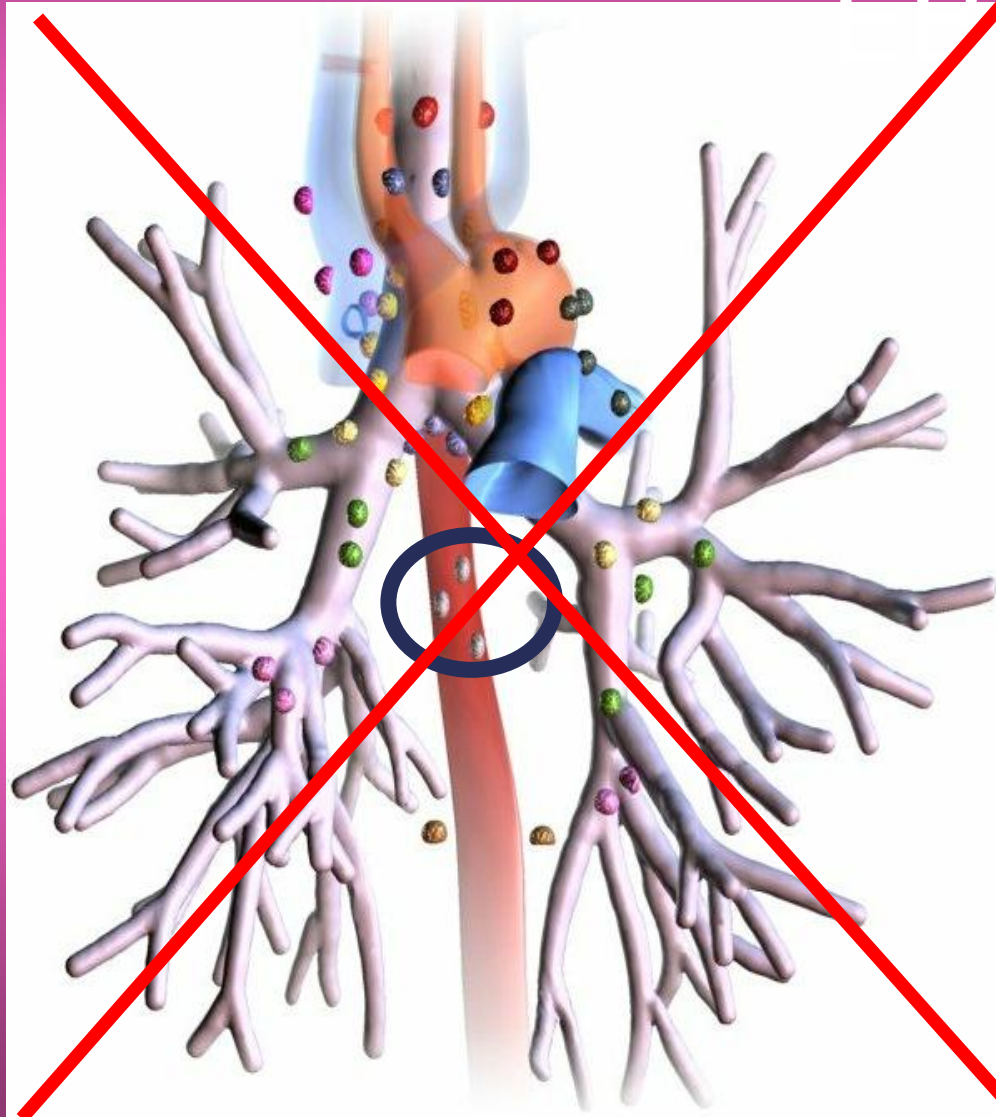
Changes in mediastinum to assess if surgery is possible!

LN 4 – Lower Paratracheal

LN 2 – Upper Paratracheal



LN 8 – Para

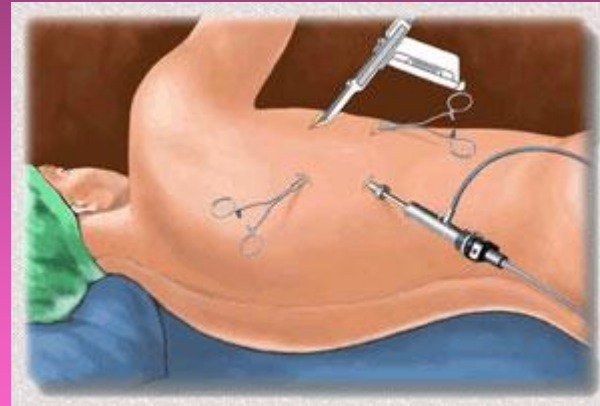


Tumor (Tu) med stor lymfeknude (LN) i mediastinum. Aorta (AO), Ateria pulmonalis (PA).

Other procedures



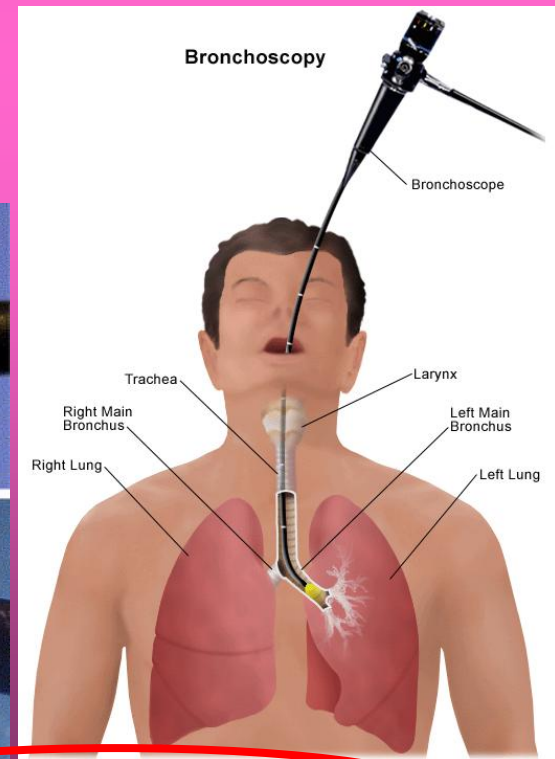
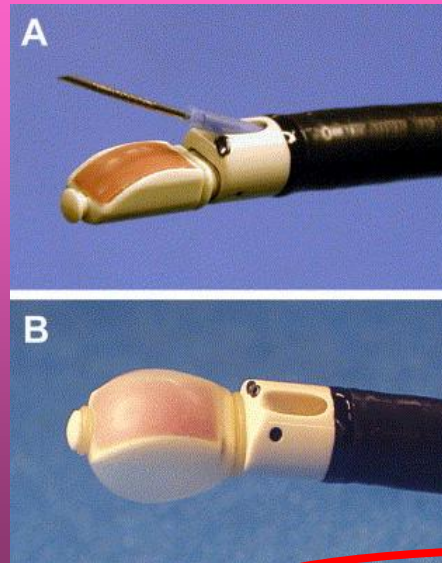
Traditional surgery



VATS



Thoracoscopy



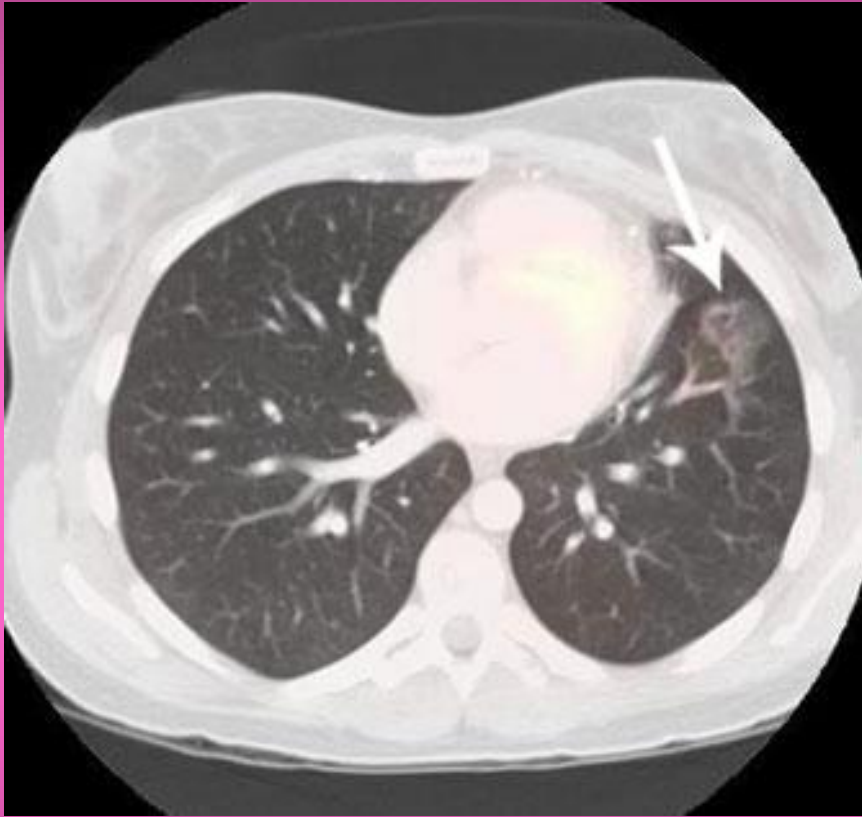
Bronchoscopy + EBUS

PET scan in lung cancer

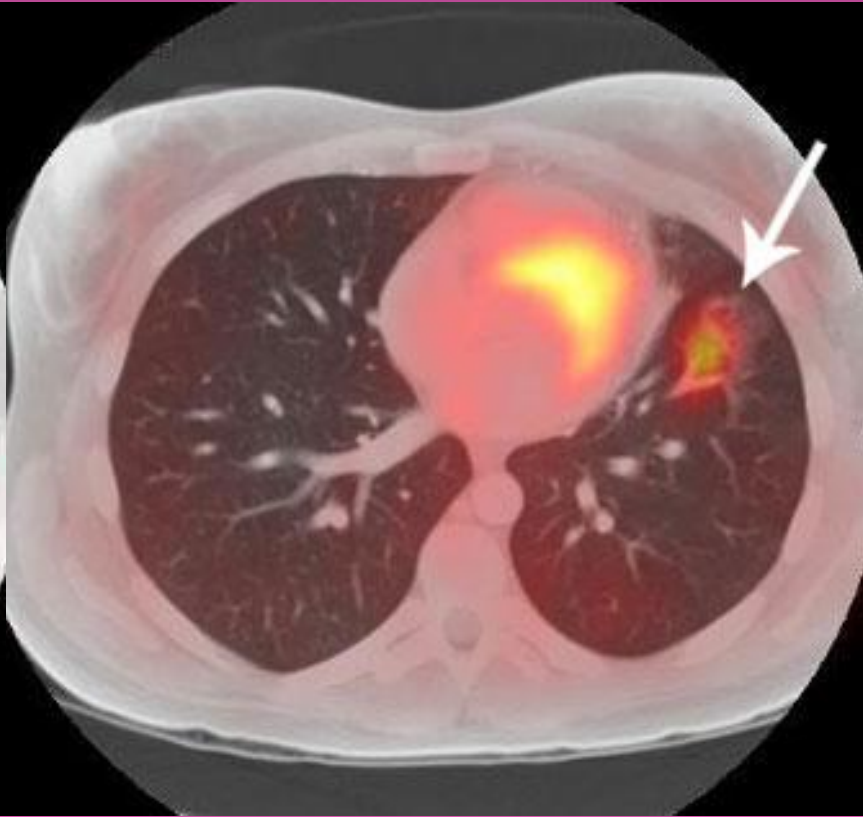
A necessary "tool"

Its all about staging





CT scan



PET – CT scan

“needed” number of diagnostic tests

CT scan of Thorax and upper abdomen with contrast

Bronchoscopy/or CT guided Biopsy,

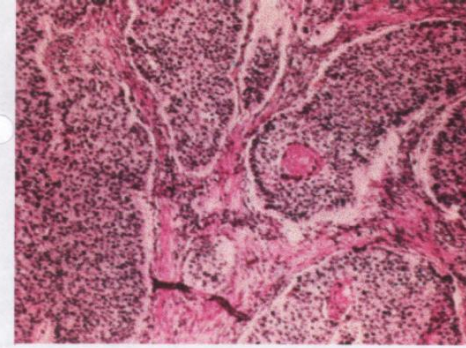
PET-CT

Endo-bronchial ultra sound (EBUS)/
oesophageal ultra sound (EUS)

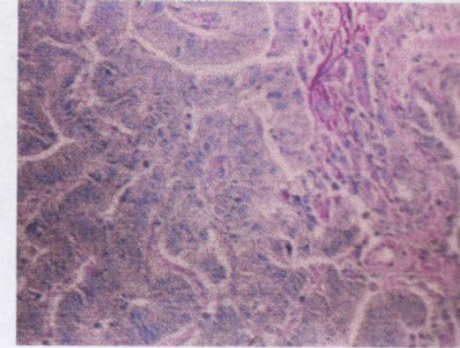


In the days before lung cancer

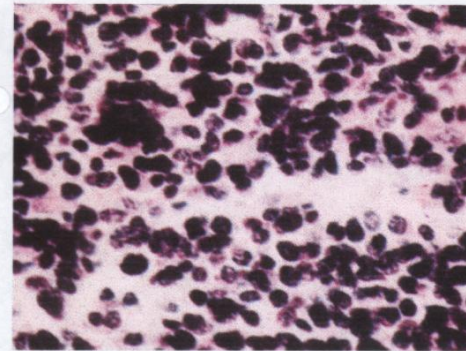
Copyright © 2001 David Farley, d-farley@biblio.org <http://biblio.org/Dave/drfun.html>



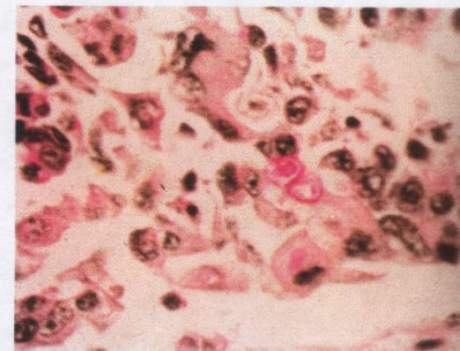
Planocellulært carcinom



Adenocarcinom



Småcellet carcinom



Storcellet carcinom

~90% of all lungcancer is due to smoking

5 years survival is very low at aprox 7 %!

Lung cancer

Remember Smoking-related disease

Robbins / Cotran Textbook of Pathology

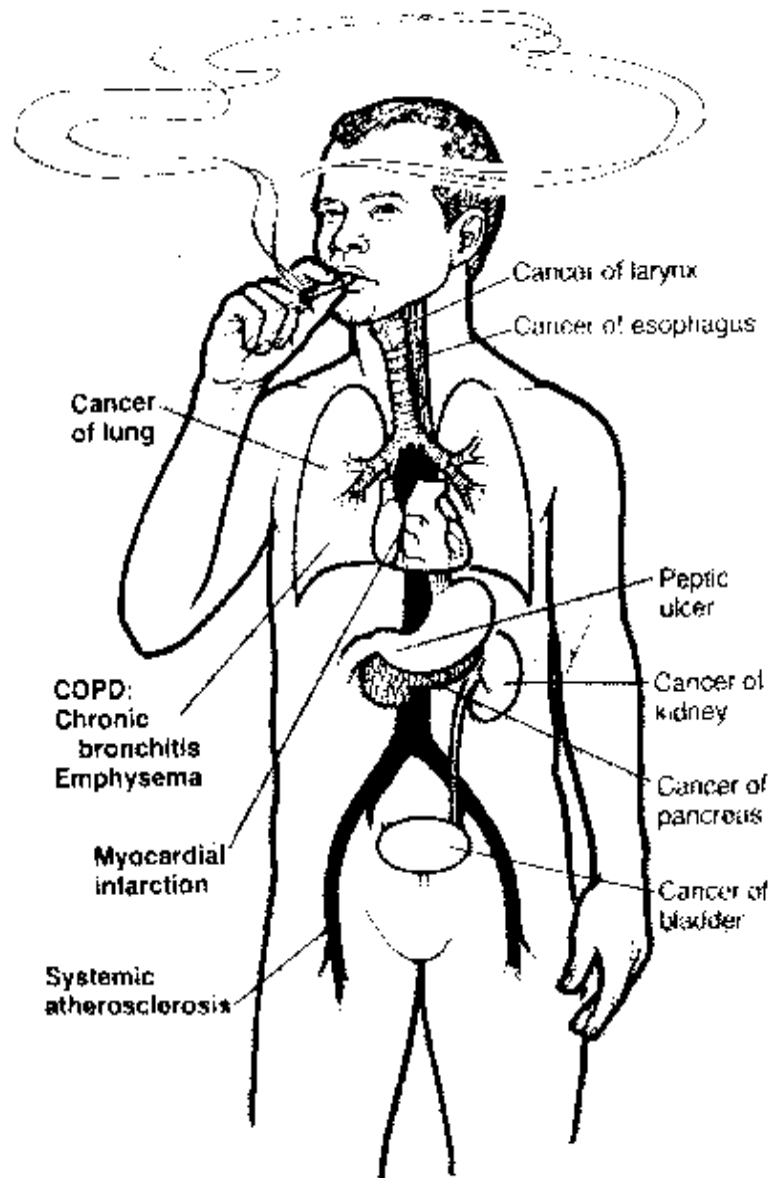
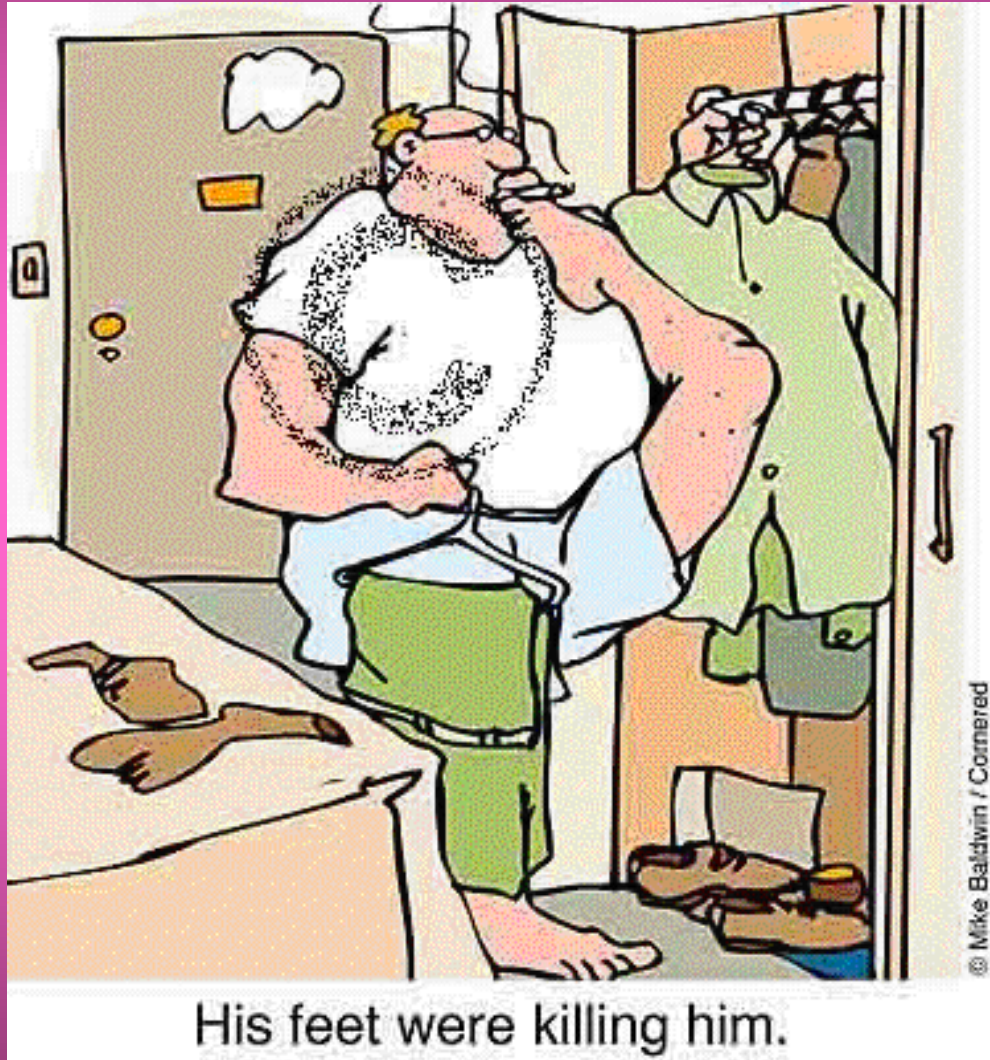


Figure 8-1. Adverse effects of smoking.



Other causes to Lung cancer



Asbest

Heavy industry (RARE)

aluminium

chrom

arsenic

chromium

mustard gas,

nickel

vinyl chloride

bis (chloromethyl) ether

Radiation -

iatrogen

radon

+Unknown

Relative risk for lung cancer

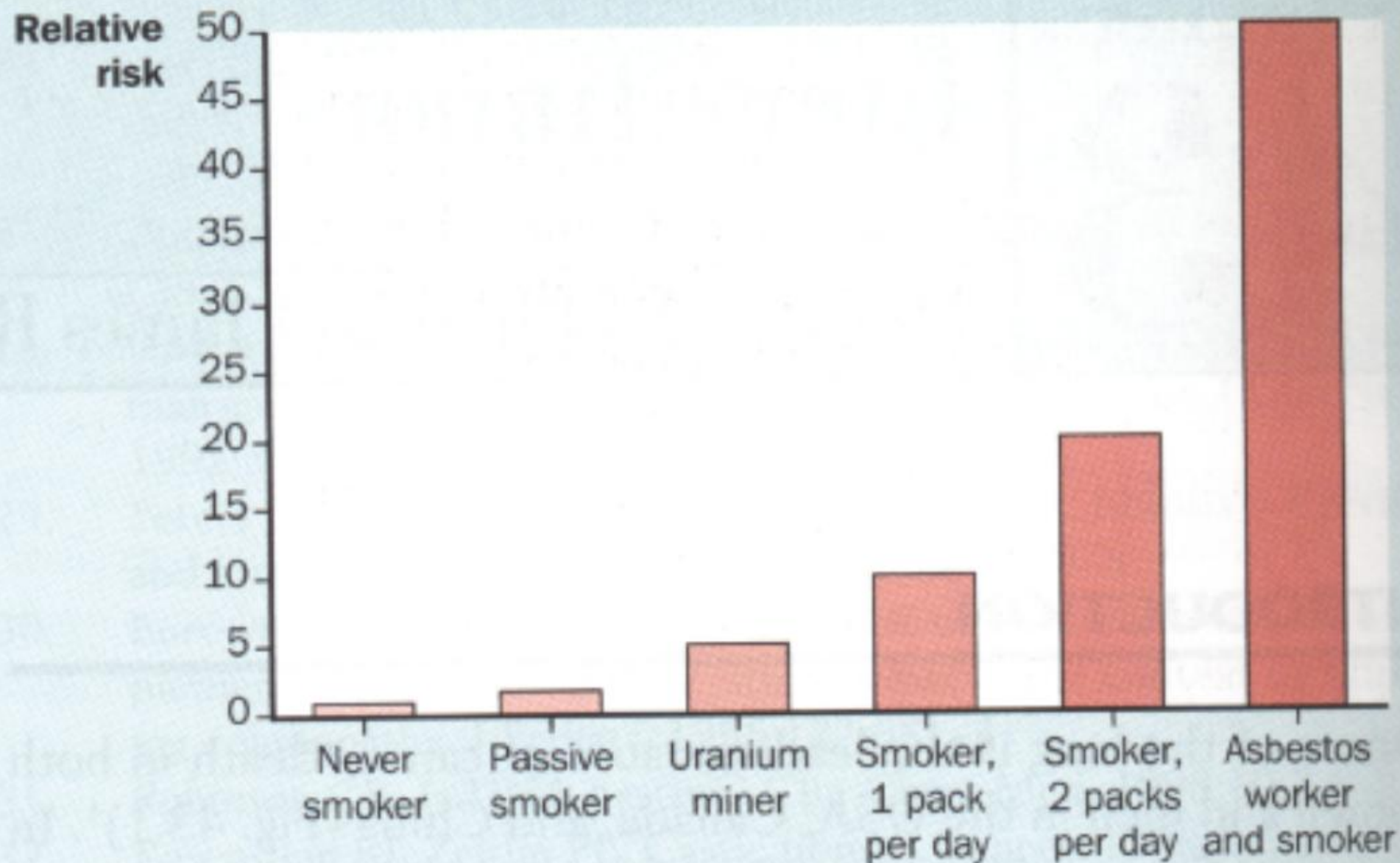
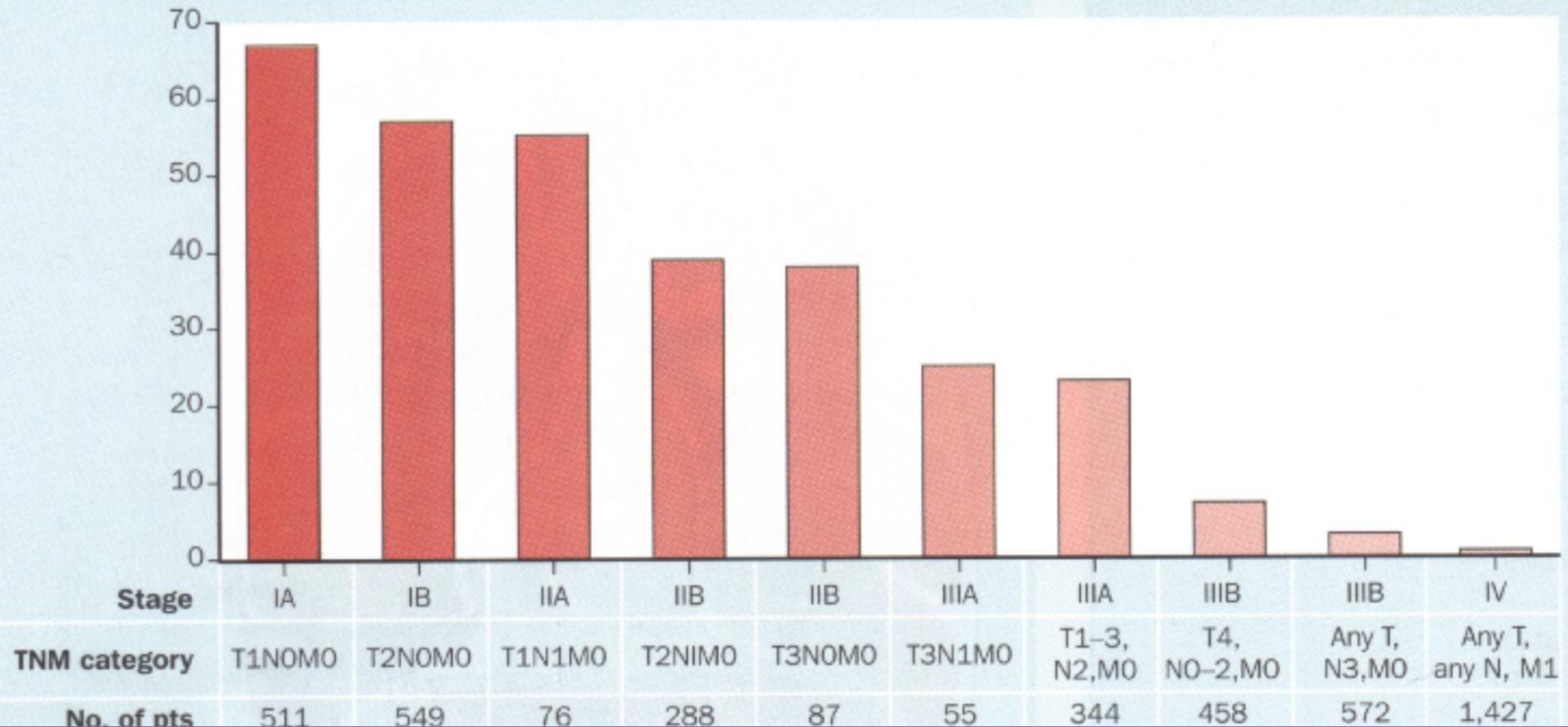


Figure 43.3 Approximate relative risk factors for lung cancer.

Smoking stop and lung cancer

- Risk for lung cancer is half after 5 years
- Close to the level of non smoker after 15 – 20 years
- - however, always double the risk for developing lung cancer (if smoked more than 20 pack years).

Five year survival of patients pathologically staged



So its all about staging !!!!!!!!!

Carcinoma of the Lung

- 6.5 % of all deaths
- #1 cause of cancer deaths in males & females
 - **31% of male cancer deaths in 2001**
 - 90,367 deaths
 - **25% of female cancer deaths**
 - 65,506 deaths

Lung cancer

Figure 6
Age-Adjusted Cancer Death Rates* for Males by Site,
US, 1930-1996

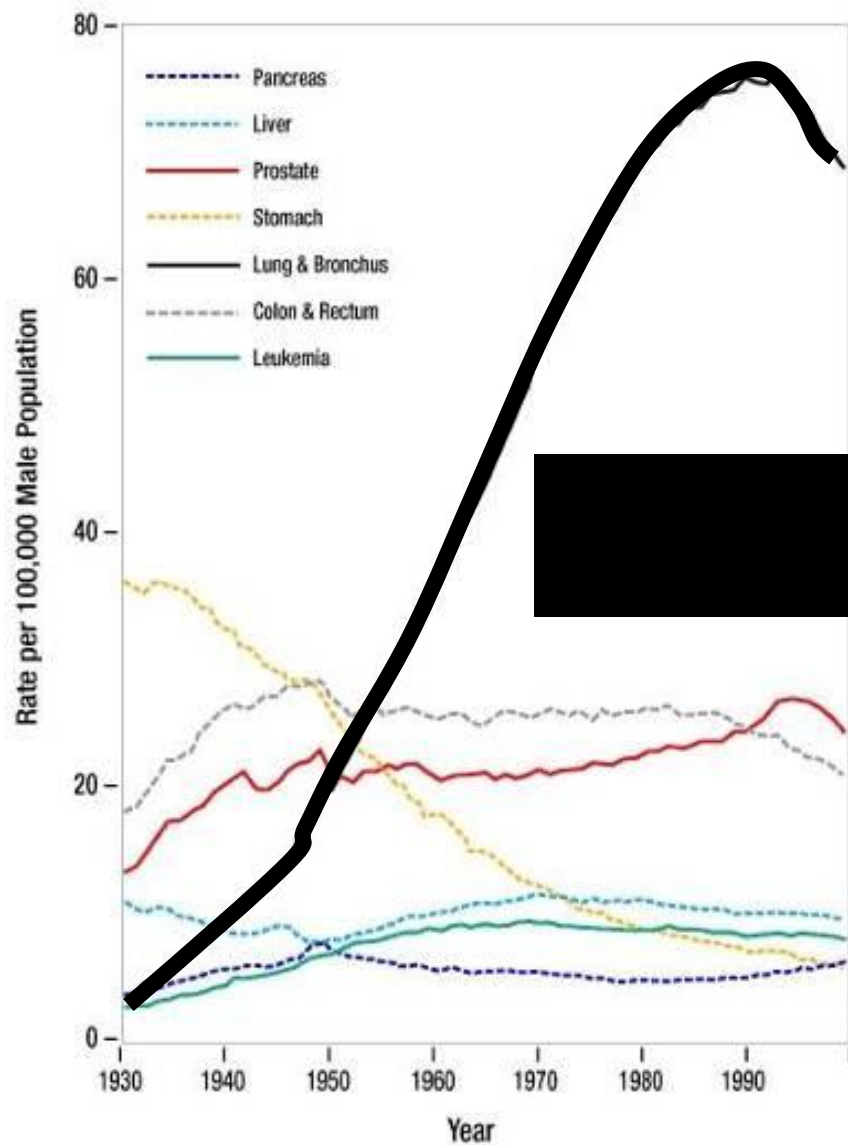
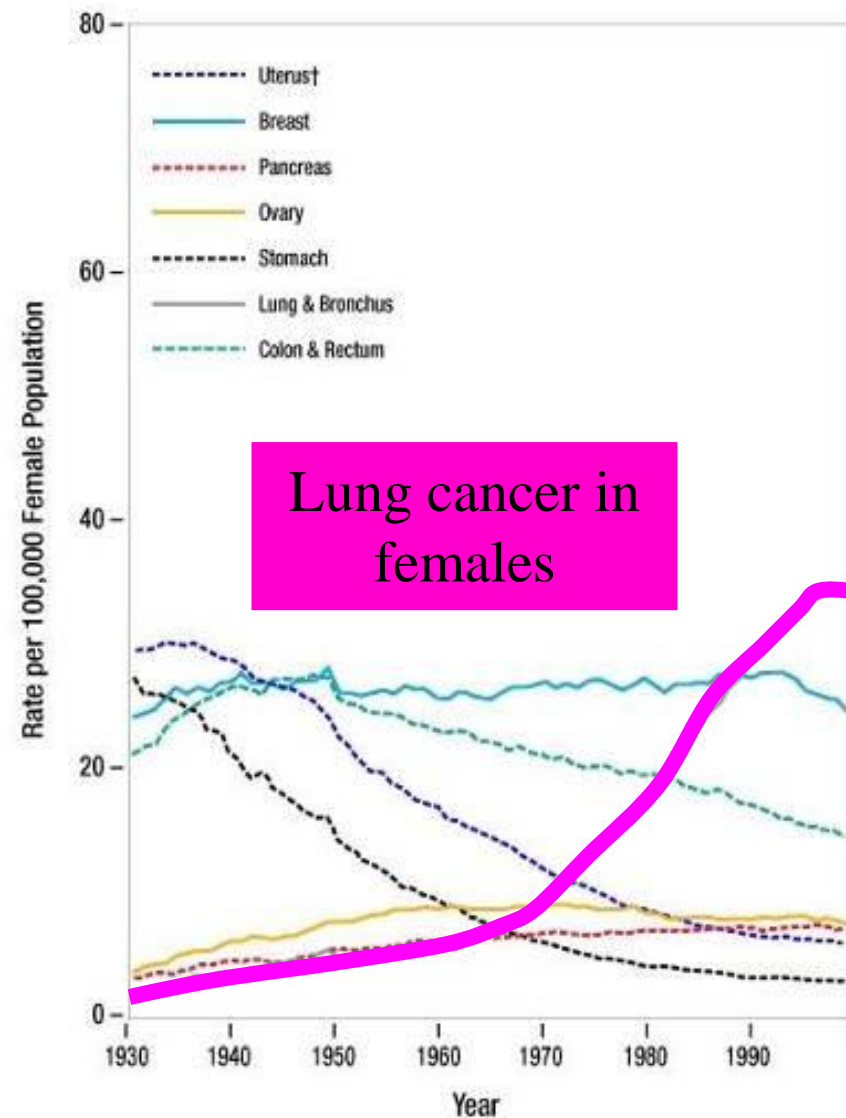


Figure 5
Age-Adjusted Cancer Death Rates* for Females by Site,
US, 1930-1996

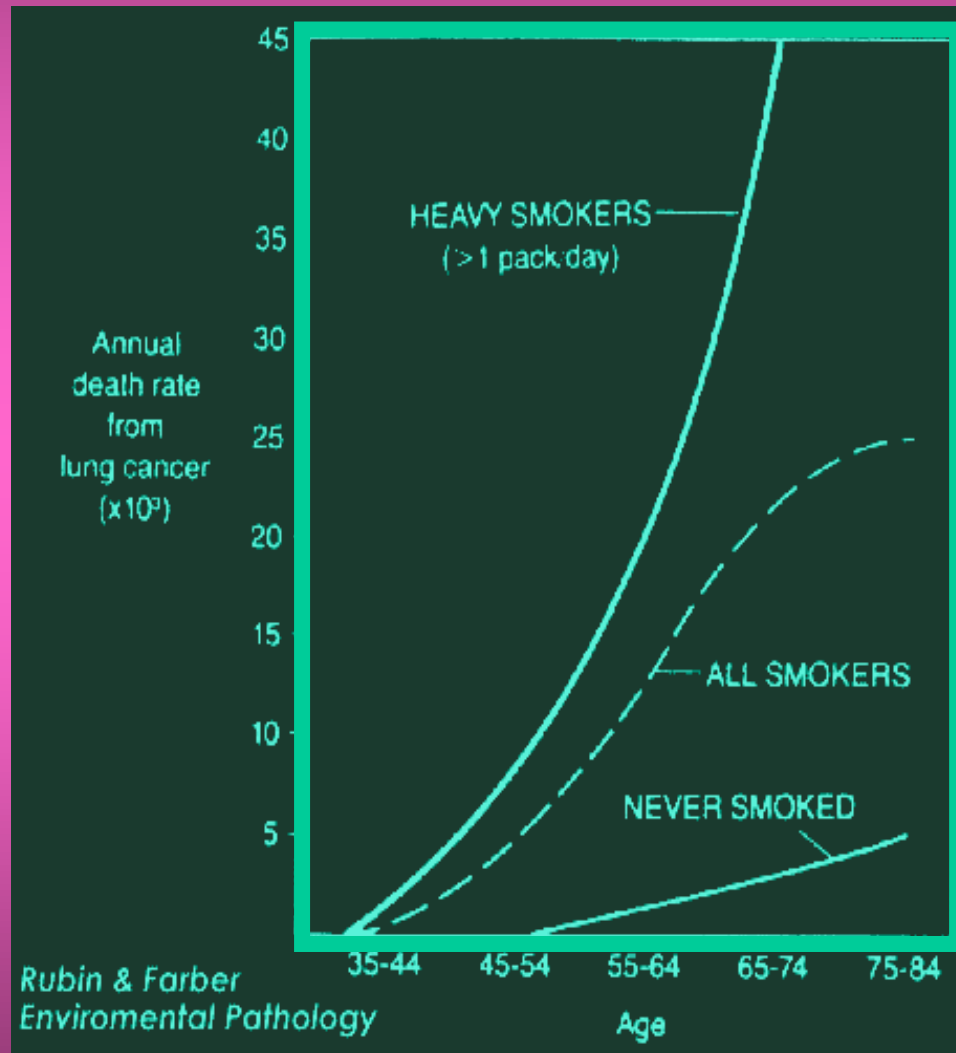


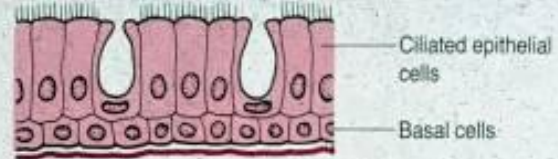
Lung cancer in
females

Cancer Deaths estimated for 2004

<u>Sites</u>	<u>New Cases</u>	<u>Deaths</u>
ALL	1,368,300	563,700
Lung	173,770	160,440
Colon-Rectum	146,940	56,808
Breast	217,440	40,580
Prostate	230,110	29,900

Annual death rate for lung cancer





NORMAL BRONCHIAL MUCOSA

Cigarette smoke



BASAL CELL HYPERPLASIA



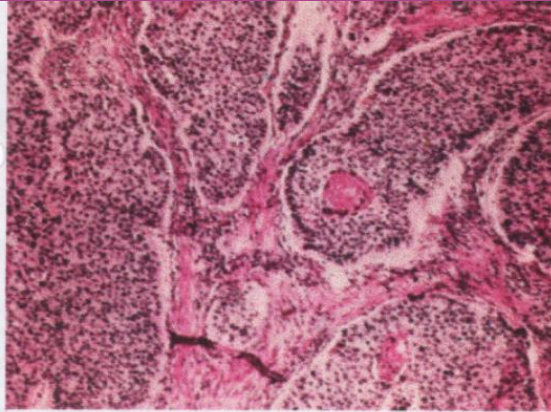
SQUAMOUS METAPLASIA AND DYSPLASIA



CARCINOMA-IN-SITU WITH MICROINVASION

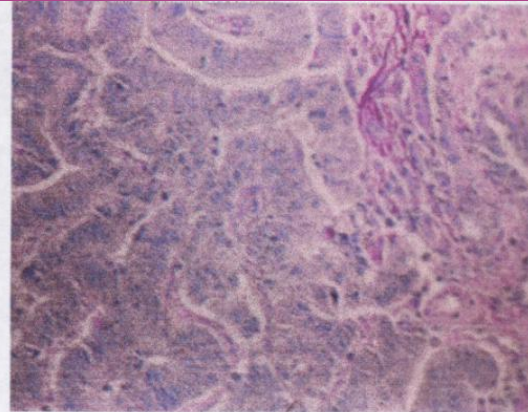
Classification of Lung Carcinoma (Major Types) ?

30%

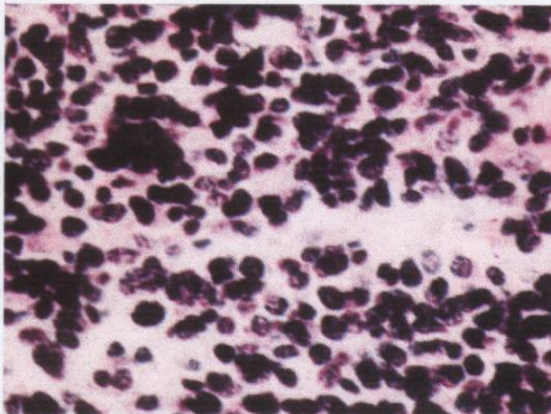


Planocellulært carcinom
Squamous cell carcinoma

35%

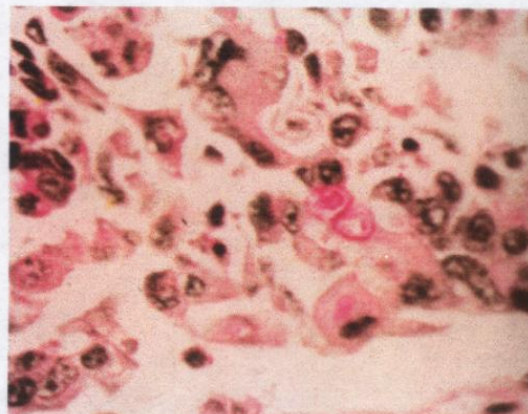


Adenocarcinom



Småcellet carcinom
Small cell carcinoma

20%

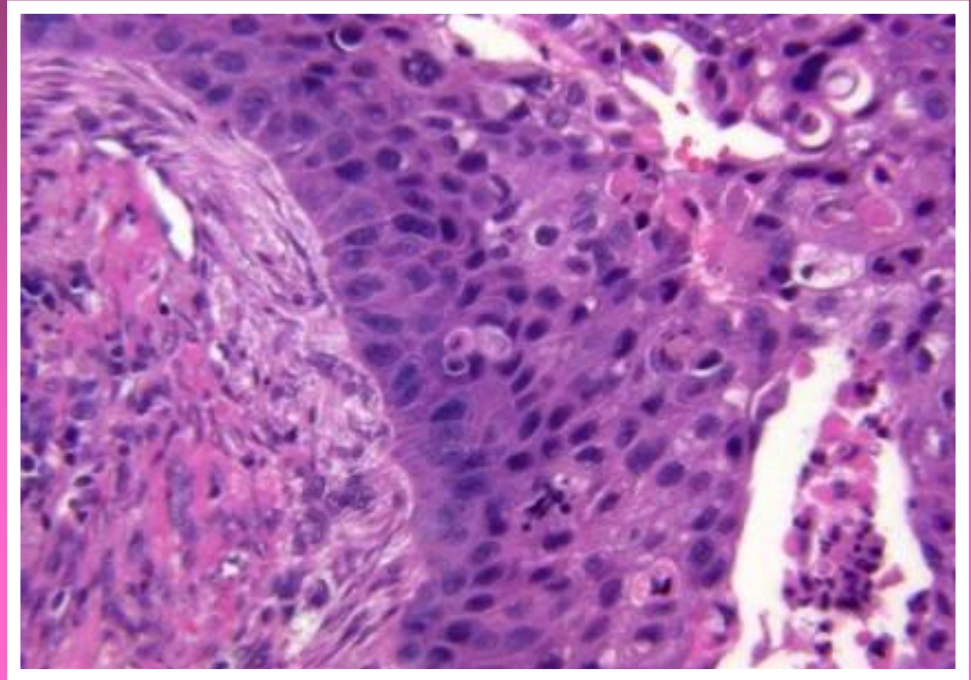
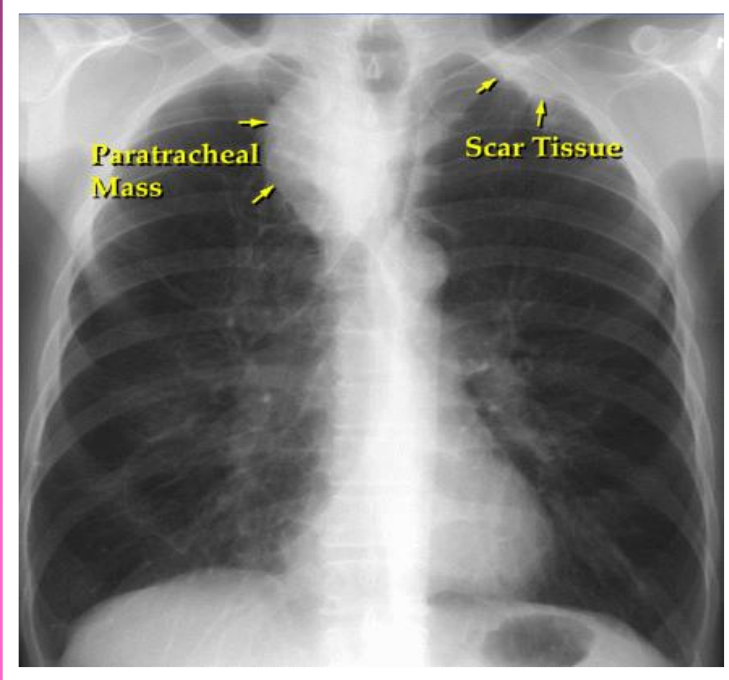


Storcellet carcinom
Large cell carcinoma

10%

5% others

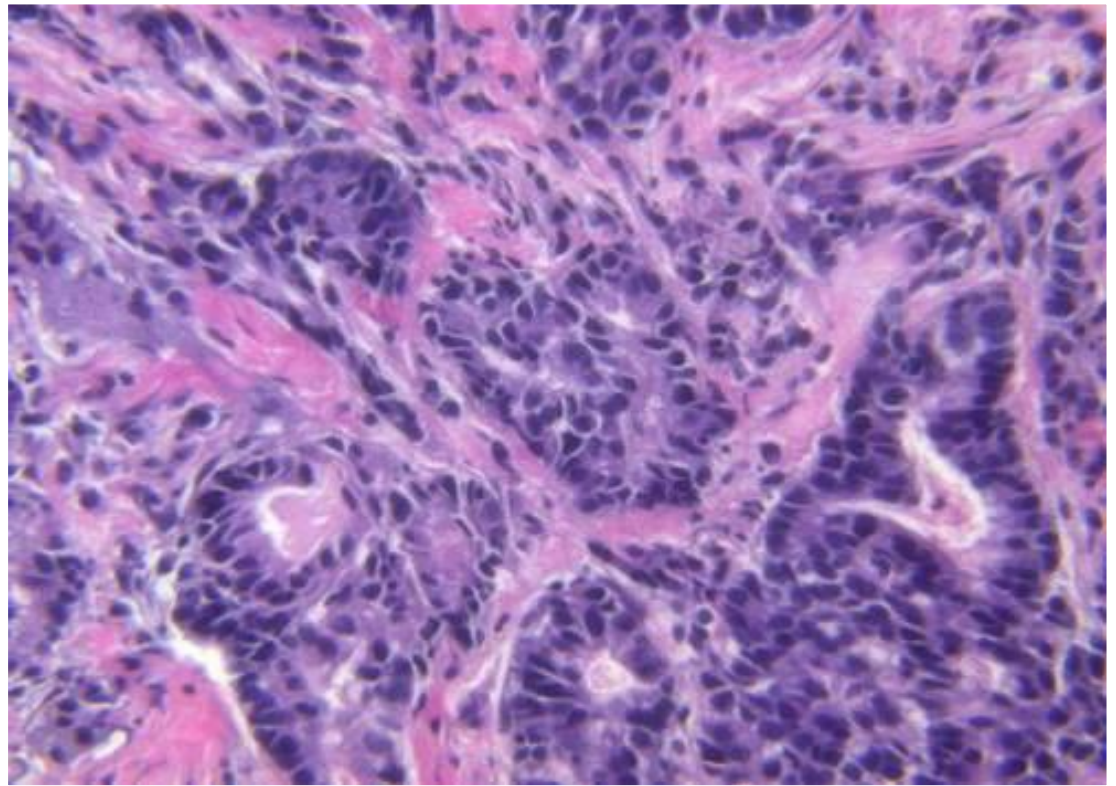
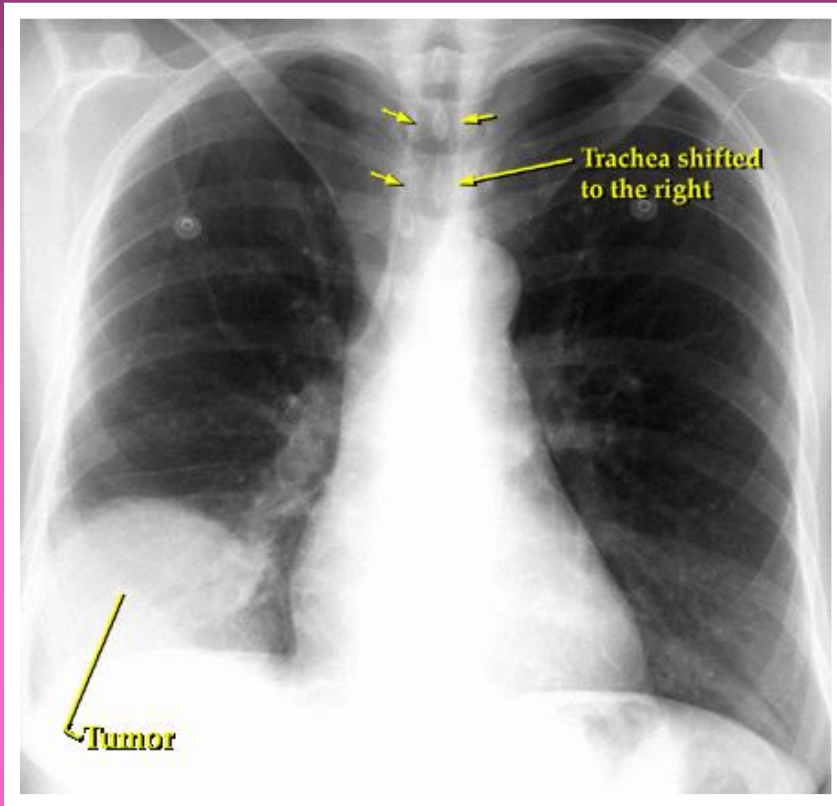
Squamous cell carcinoma



- Frequency 35%
- Smoking: X 25 (increased risk)
- Males > females
- Survival (5 years): 15 - 20%
- Arises in bronchial squamous metaplasia
- Often centrally located
- May cavitate

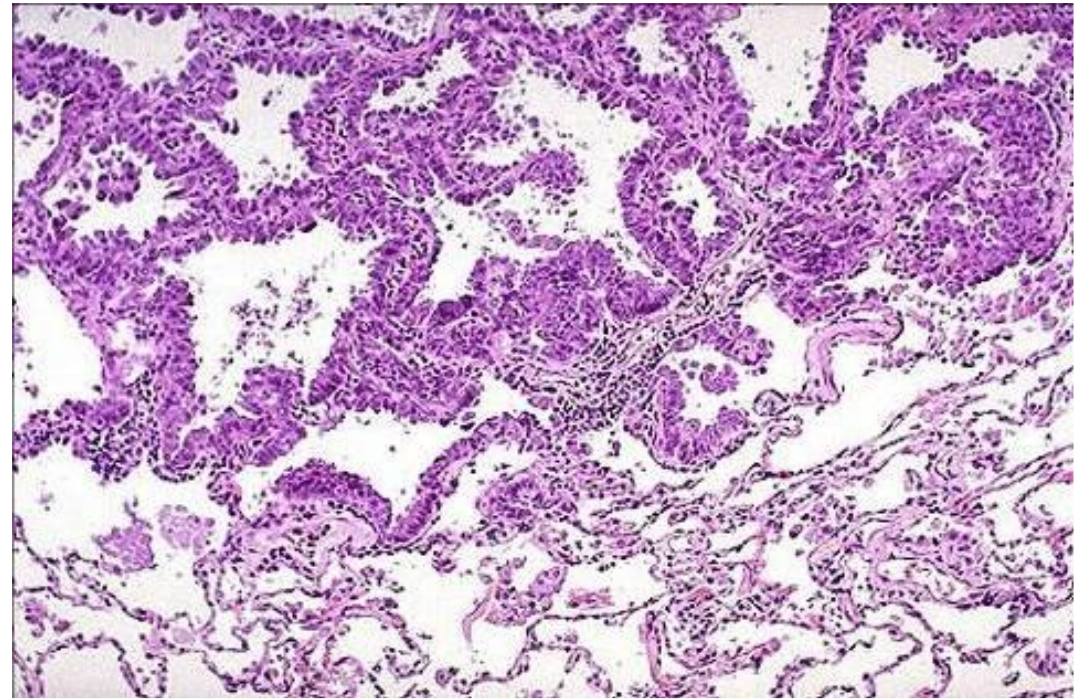
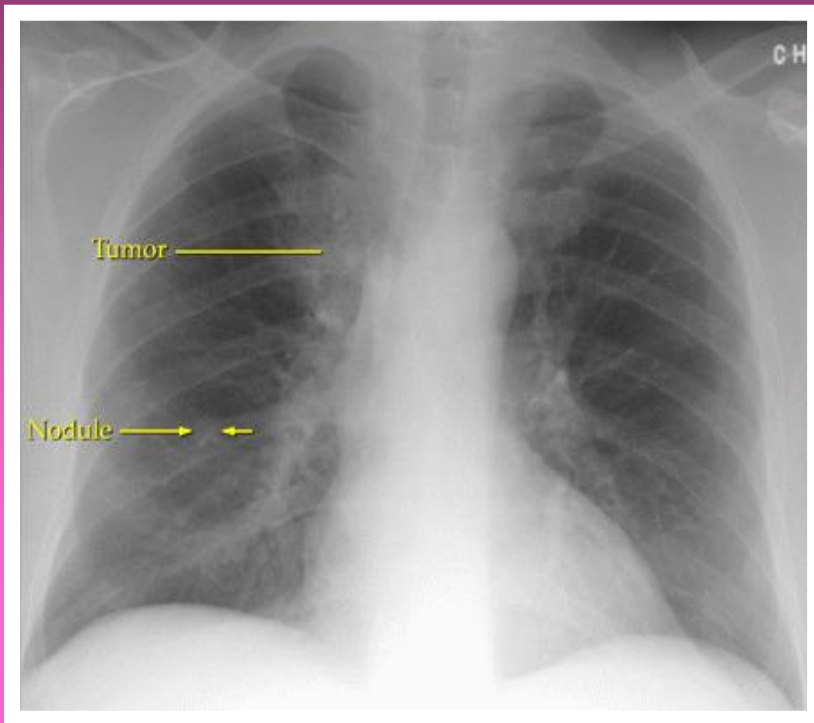


Adenocarcinoma



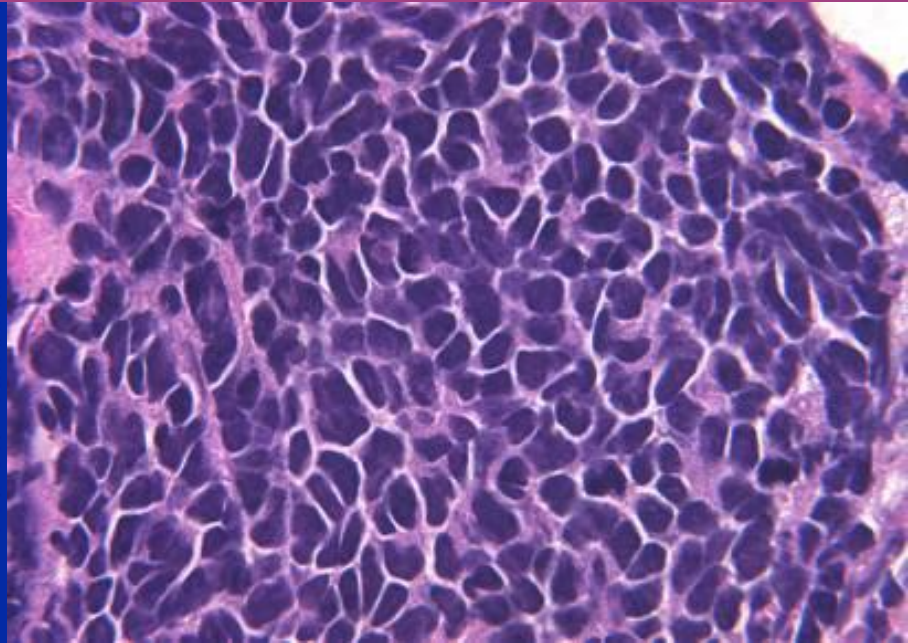
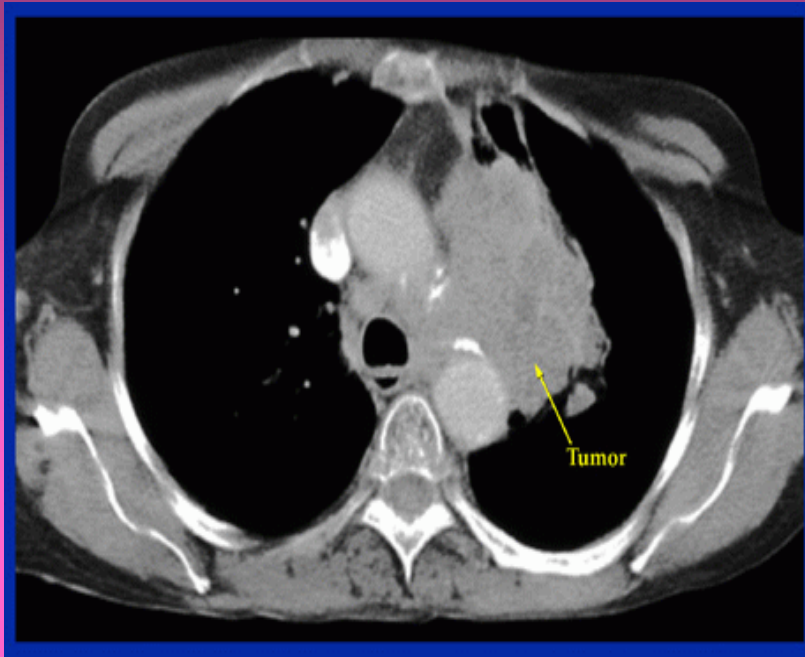
- Frequency: 30%
- Smoking: X 3 (increased risk)
- Males < females
- Survival (5 years): 15 - 20%
- Often peripheral

Bronchioloalveolar carcinoma

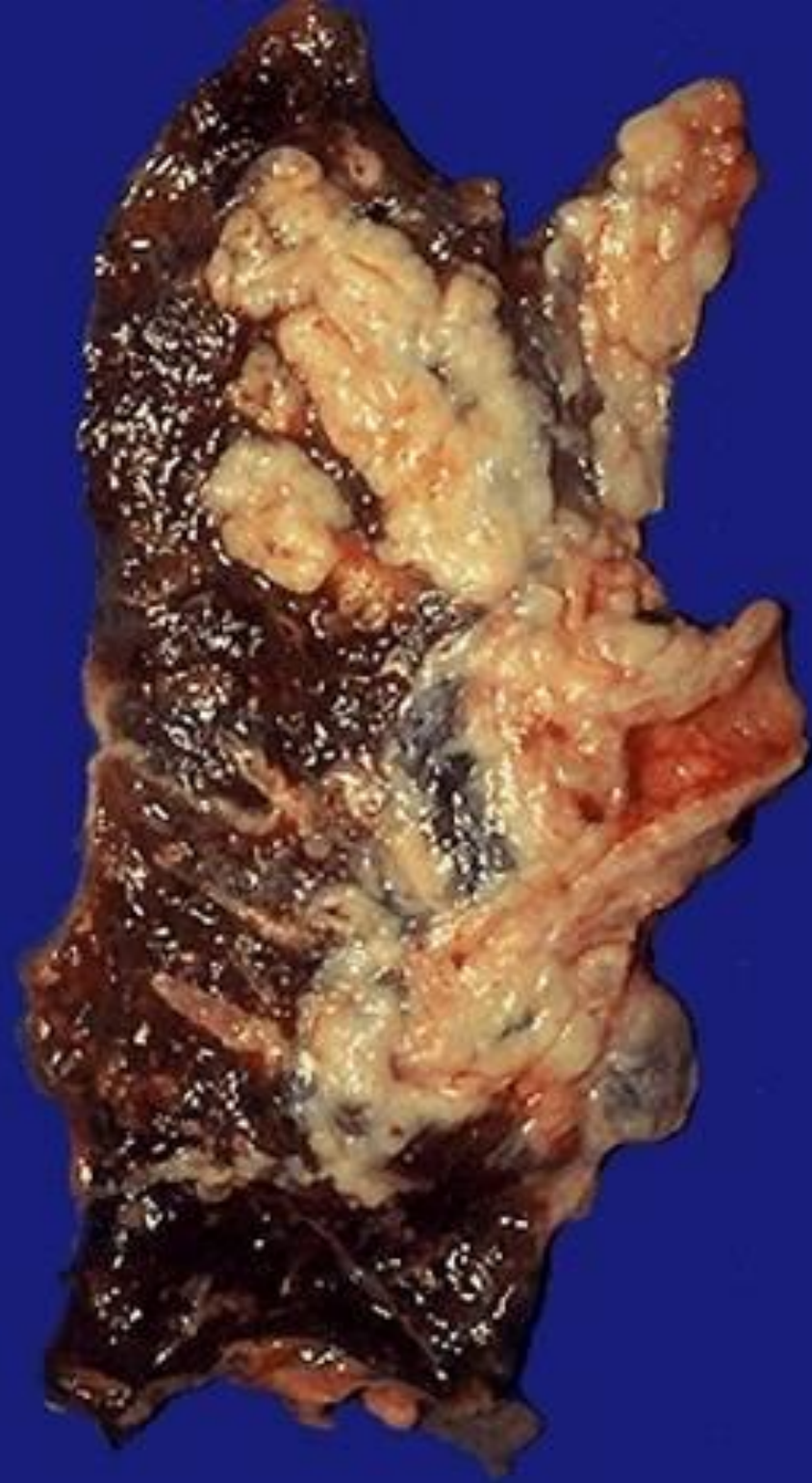


- Frequency: 2 %
- Smoking: yes
- Males = females
- Survival (5 years): 25 a 40 %.
- Presentation:
 - Single or multiple tumor nodules
 - Miliary tumor
 - “Pneumonic form”

Small cell carcinoma



- **Frequency: 25 %**
- **Smoking: 95% of patients**
- **Males >> females**
- **Survival (5 years): 1 - 5 %.**



Large Cell Carcinoma

- **Frequency: 10 %**
- **Gross**
 - Peripheral lesion
- **Microscopic**
 - Wastebasket group of tumors that do not fit the criteria of a squamous cell carcinoma, adenocarcinoma, or small cell carcinoma
- **Prognosis**
 - Similar to adenocarcinoma





Lung cancer in DK and probably also Cyprus

- Average tobacco use if new diagnosed lung cancer is 45 pack years
- 4% of lung cancer patients were never smokers
- 1 years survival was 35 %
- 21% could be offered operation

**100
patients**

**35
operable**

**25-30
resected for cure**

**8-12
survive for 5 years
(30% of those resected for cure)**