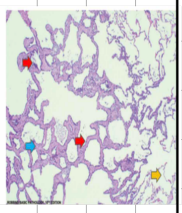
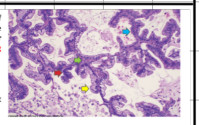
In this summary we're going to mention the carcinomas of the lung which represents 95% of the primary lung tumors

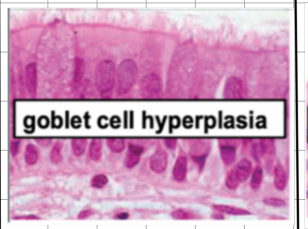
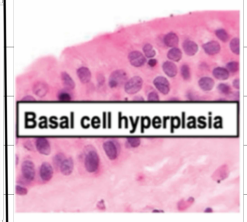
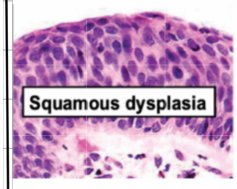
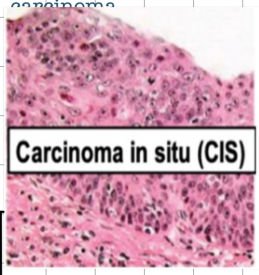
Non small cell lung carcinoma

Type	Location	Growth rate	Size	Morphology	Notes
Adenocarcinoma	Peripherally & closer to the hilum	Slow growing	Form smaller masses	1.Acinar(gland-forming): shows many proliferating gland-like structures (Acini) surrounded by a dense desmoplastic reaction. 2. Papillary 3. Mucinous 4. Solidtypes	It tends to metastasize widely at early stage Most common in (less than 45 non smoker women) It also has different stages will talk about them in a separate table
Squamous Cell Carcinoma	Arise centrally in major bronchi and eventually spread to local hilar nodes but may disseminate outside the thorax.	It would take years to develop from Squamous metaplasia or dysplasia in the bronchial epithelium to Squamous cell carcinoma.	Large lesions may undergo central necrosis, giving rise to cavitations.	Range from well differentiated squamous cell neoplasms, which show keratin pearls and intercellular bridges, to poorly differentiated neoplasms, with only minimal residual squamous cell features. Gross appearance: pale yellow-white central area	-Lesions are asymptomatic in the beginning and reaches a symptomatic stage when well-defined tumor mass begins to obstruct the lumen of a major bronchus, this may be associated with distal atelectasis and infection. - it's more common in males

* Stages of adenocarcinoma

type	appearance	Histological findings	Notes	Histological sections
Atypical adenomatous hyperplasia	well-demarcated focus of epithelial proliferation. small lesion less than 5mm	Composed of cuboidal to low-columnar cells. Demonstrates nuclear hyperchromasia. Pleomorphism. Prominent nucleoli.	the lesions are monoclonal and share many molecular aberrations with adenocarcinomas (KRAS mutations).	 Red Arrow: Proliferation of hyperchromatic (blue/purple) cuboidal epithelial lining, which lines the alveolar walls. Yellow Arrow: (Right side) shows almost normal alveolar walls. Blue Arrow: Mild underlying interstitial fibrosis.
AIS Involves peripheral parts as a single nodule	Less than 3 cm	The tumor cells May be non-mucinous, mucinous, or mixed.And They grow in a monolayer along the alveolar septa, which serve as a scaffold for proliferation.	No destruction to the underlying tissue No destruction of alveolar architecture, or stromal invasion with desmoplasia (which is what is seen in Invasive Adenocarcinoma)	 - Blue arrow: Monolayered proliferation of atypical cells. These atypical cells are proliferating along the **preexisting alveolar septa** (again, AIS grows along preexisting structures). - **No destruction of the alveolar septa.** - **No desmoplasia.** - **No invasion .** (All of the mentioned features prove this isn't Invasive Adenocarcinoma) - Green arrow: Preexisting alveolar septa. - Red arrow: Shows atypical proliferation, with a certain degree of **nuclear enlargement and hyper-chromasia** in these proliferating cells. - Yellow Arrow: Apical Mucin (which explains why this demonstrates the mucinous subtype of AIS).
Invasive and minimally invasive adenocarcinoma	Mini invasive Size: <3 cm in diameter with an invasive component of <5 mm. Invasive size : a tumor of any size with an area of invasion >5 mm.	If desmoplastic invasion and alveolar destruction is seen, then this is a diagnostic feature of Invasive Adenocarcinoma		

The histologic findings of precursor lesions, CIS (Carcinoma In Situ) and Invasive Squamous Cell Carcinoma.

Type	Goblet cell hyperplasia	Basal cell hyperplasia	Squamous metaplasia	Squamous dysplasia	Sever dysplasia
Notes	One of the earliest mild changes in damaged respiratory epithelium, which results from smoking.	Smoking-related adaptive response.	Ciliated pseudostratified columnar epithelium is replaced by squamous epithelium.	Characterized by presence of: a. Disordered squamous epithelium b. Lossofnuclearpolarity c. Nuclear hyperchromasia d. Pleomorphism e. Mitoticfigures May progress through stages of mild, moderate, and severe dysplasia	Full thickness of squamous epithelium showing: a. Cytologic atypia b. Lack of basement membrane disruption - In this stage, there is full thickness proliferation of cytologically malignant cells, without any basement membrane invasion. - This stage happens immediately before invasive squamous cell carcinoma
					

Invasive Squamous Cell Carcinoma

Lesions show:
a. Cytologic atypia
b. Basement membrane inv