

RS Embryology - Weeks summary

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Nose and palate :

During 3rd week : the embryonic disc turns up to embryonic tube.

End of 4th week : facial prominence begin developing (neural crest mesenchyme + first pharyngeal pouch).

During 5th week : nasal placode invaginate inward forming nasal pit , vestibule and (medial/lateral) nasal prominence.

During the following two weeks (6th-7th) : the structures go medially and the medial nasal prominence fuse together.

During 6th week : canalization of nasal pits induced by FGFs + the palatine shelves of maxilla appear oblique and go down.

During 7th week : the palatine shelves of maxilla go horizontally above the tongue forming the 2° palate and fuse with the 1° palate.

During 8th week : the 2 folds of soft palate unites with the hard palate.

During 11th week : the 2 folds of uvula unites with the soft palate.

Lung 🫁:

During 4th week : appearance of respiratory diverticulum (lung bud) from ventral wall of foregut induced by FGFs.

Beginning of 5th week : the respiratory buds enlarge into right and left main bronchi and give Lobar and segmental branches.

LUNG MATURITY STAGES ;

5-16th week=mid of 4th month : pseudoglandular stage (just terminal bronchioles). Stage one

16-26th week=mid of 6th month : canalicular stage (*1* terminal bronchiole give *2* respiratory bronchioles) and (each respiratory bronchiole give 3-6 alveolar duct) / more BVs without connection (no gas exchange) delivery at this stage need hospitalization, **at the end of this stage we have 17 generations of bronchial tree.** Stage two

26th week-birthday : terminal sac stage (immature alveoli) / connected BVs (ability for gas exchange) delivery at this stage does not need hospitalization, **after birth we have 23 generations of bronchial tree.** Stage three

8th month of pregnancy(28-32weeks)-childhood(10yrs) : alveolar stage , mature alveoli , complete contact (respiratory membrane/blood air barrier) + connection of lymph to the walls. Stage four

6-8 months : beginning of surfactant cell production.

2 week before delivery (9th month) : peak production of surfactant cell.