

Taipei Medical University  
**口腔胚胎及組織學**  
**Oral embryology & histology**

**General Embryology**

臺北醫學大學 牙醫學系  
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**學習目標**

能了解頭面部及口腔之發育、結構與功能，並發展能有效吸收與傳播相關資訊之辭彙，將胚胎及組織學上之基本概念，應用於臨床之診斷與治療

**參考資料**

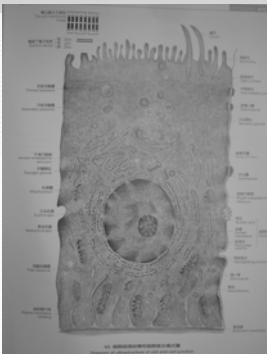
1. Illustrated Dental Embryology, Histology, and Anatomy: Mary Bath-Balogh, Margaret J. Fehrenbach, 2nd Edition, Elsevier Saunders, 2006
2. Esstential of Oral Histology and Embryology--A clinical approach: James K Avery, Denial J Chiego, Jr 3rd Edition, Elsevier Mosby, 2006
3. Ten Cate's Oral Histology: Development, Structure, and Function: Nanci Anatonio, 6th ed. Mosby, 2003

**Summary**

提供學生探討頭面部及口腔之發育，認識牙齒及口腔組織之正常顯微結構，並了解其功能與結構之關係，進而對生理、病理與臨床牙科學上之問題能做比較與思考，為各牙科臨床科目之重要基礎課程

**Cell**

- Cell nucleus
- Cytoplasm



**Cell nucleus**

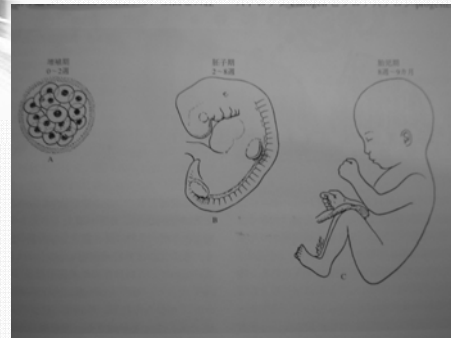
- In all cells , except RBC and PLT
- DNA ,RNA containing
- Nucleolus containing (witout membrane)
- Nuclear envelope surrounding
- Nuclear pore on nuclear envelope

## Cytoplasm

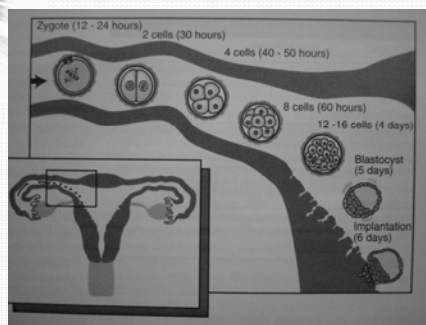
- Cytosol
- Endoplasmic reticulum(ER)
  - s-ER / r-ER(ribosome)
- Golgi complex
- Lysosome
- Mitochondria
- Microtubule
- Plasma membrane



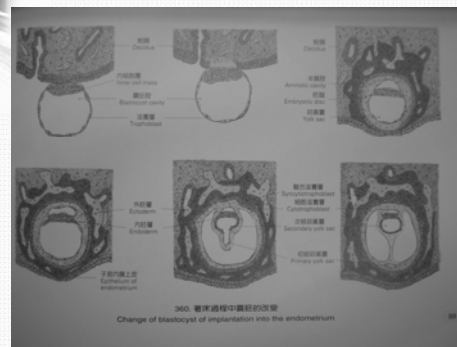
## Development



## Development of Embryo



## Development of Embryo



## Second Week of Prenatal Development

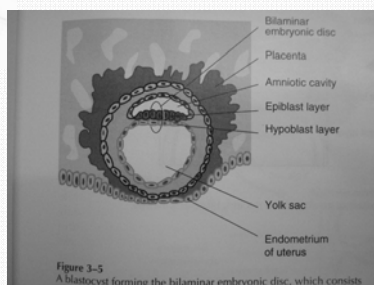


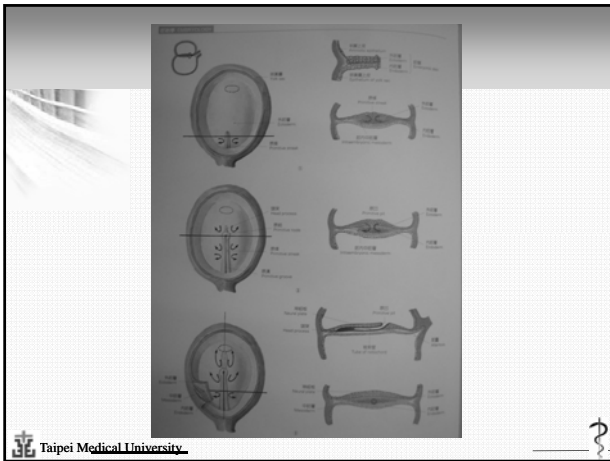
Figure 3-5  
A blastocyst forming the bilaminar embryonic disc, which consists



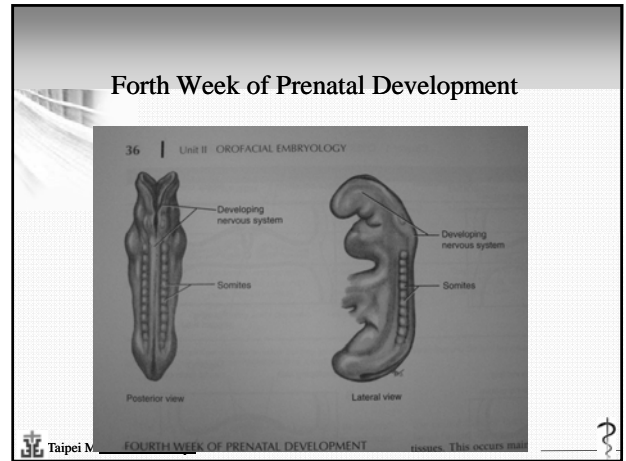
## Third Week of Prenatal Development

- **Mesoderm , Ectoderm, Endoderm formation**
- **Neural Crest formation from ectoderm within mesenchyme.**
- **Mesoderm differentiates to form somities**

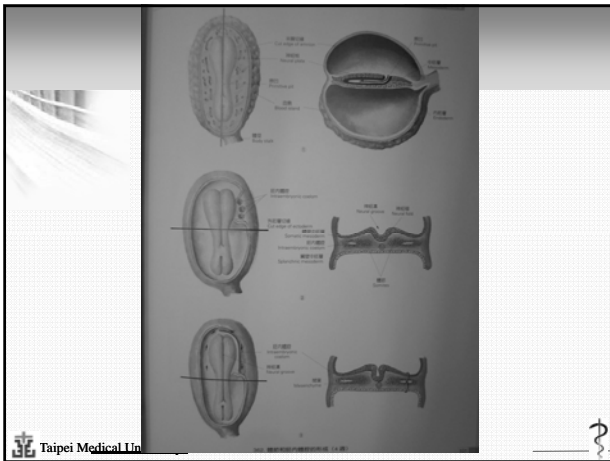




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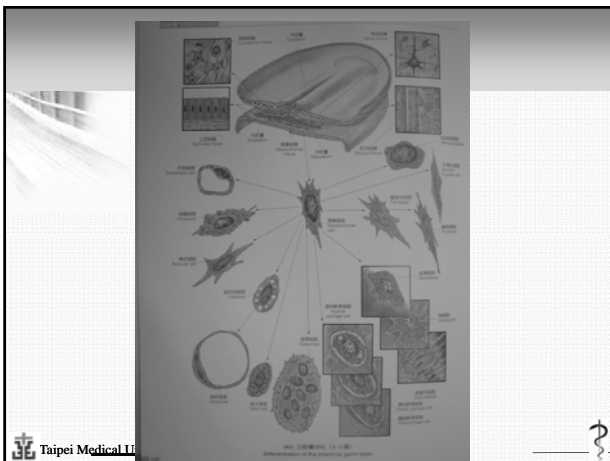


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### Development of tissue

- Ectoderm
  - nerve system, skin, hair, nail, sudutaneous gland, oral cavity, nasal cavity, enamel
- Mesoderm
  - muscle, connective tissue--- Bone, cartilage, blood, dentin, pulp, cementum, PDL
- Endoderm
  - GI epithelium

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### Nerve system

図 1-14 神経管の発達 (左) と断面 (右)

図 1-15 脳神経の発生

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### Connective tissue proper

- Fibroblast beside neural tube to from sclerotome , dermatome, and myotome
- Sclerotome differentiate to osteoblast, chondoblast , mesenchymal cell
- Dematome differentiate to demis and viceral mesoderm

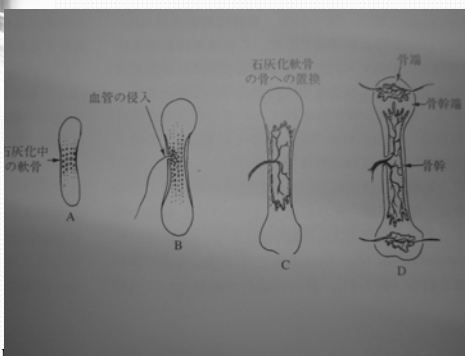


### Cartilage and bone

- The 5<sup>th</sup> week , extreme ,skull,and face cartilage fromation
- Appostional growth and interstitial growth in cartilage
- Endochondral bone development
- Intramembranous bone formation



### Endochonral bone development



### Muscle

- The 10<sup>th</sup> week , myoblasts differentiate to muscle cells from myotome
- Skeletal muscle , Cardiac muscle and smooth muscle



### Cardiovascular system

- At the 3<sup>rd</sup> week , agiogenic cluster in viceral mesoderm to develop angioblast, and form umbilical system
- At the 4<sup>th</sup> week , heart beats start

