

Embryology 30 Hrs.
Lectures of embryology 2nd year
GENERAL EMBRYOLOGY

**1. Introduction –Definition of medical embryology
Introduunction to molecular regulation & signaling**

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**2. Gametogenesis :Conversion of germ cells into
male& female gametes.**

**Chromosomes during mitosis &meiosis
Non disjunction**

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3.Morphological changes during gamete maturation .

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**-prenatal oogenesis
-postnatal oogenesis**

**4.Spermatogenesis -Spermiognesis –Abnormal gamete –
Ovulation .**

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5.Fertilization 1st week of development :-ovarian cycle

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**corpus luteum ,phase of fertillzatoin 1,2,3, cleavage ,
blastocyst formatiron ,
preparation of uterine endometerium to recieve the
blastocyst.**

6. 2nd week development

**Day 8 ,9 ,11-12 & 13 . clinical correlates ,abnormal
implantation**

7. 3rd week development

**Gastrulation ,primitive streak ,notochord .
Further development in trophoblast. Secondary
& tertiary villi**

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8.Differentiation of germ layers ,ectoderm

Formation of neural tube and neural crest

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Formation of auditory & lens placodes .

9.Differentiation of mesoderm ,paraxial mesoderm and their derivatives ,intermediate mesoderm & derivatives .

Lateral plate mesosodern

Somites differentiation . Blood& blood vessels

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10.Endoderm

Head fold ,tail fold ,vitelline duct ,primitive gut .

External appearance during The 2nd month

Fetal period 3rd month –birth

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11.Formation of deciduas ,fetal membrane & development of placenta .

Amnion &chorion .

Umblical cord .

Function of placenta .

2

Twins .

12 .Congenital malformation .

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Incidence & etiology

SYSTEMIC EMBRYOLOGY

13.Skeletal system

Skull ,skull abnormalities

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Limbs ,limbs abnormalities

Vertebral column ,vertebral column abnormalities .

14. Muscular system

Smooth ,striated ,&cardiac muscles .

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15 .Body cavities & serous membranes .

16.Cardiovascular system

Formation and position and heart tube .	4
Formation heart loop	
Development of sinuse venosus .	
Formation cardiac septa	
Abnormalities of atrioventricular canal	
Abnormalities of interventricular septum .	
17.Respiratory system	1
-larynx	
-Trachea ,bronchi ,& lung	
18.digestive	
Forgut: -esophagus	2
-stomach	
-Duodenum	
-Liver ,gall bladder	
-pancreas	
Mid gut & hind gut	
Physiological herniation	
Abnormalities in development of digestive system	
19 .Urogenital system	
Urinary system	1
Formation of excretory unit	
Kidney systems –pronephros	
 -Mesonephros	
 -Metanephros	
Abnormalities in development .	
20 .Genital system	
Gonad , indifferent gonad	1
Testis & ovary	
Genital duct	
External genitalia	
Abnormalities	
21. Head & neck	1

Pharyngeal arches
Pharyngeal pouches
Tongue
Thyroid gland
Cleft lip & palate

22.Eye & ear

Optic cup , lens vesicle
Retina ,iris ,culinary body &lens
Internal ear ,middle &external ear .

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23. Central nervous System

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Skin -spinal cord
-Brain
-Clinical Correlates

24 - Epidermis & dermis

Hair
Mammary gland .