

Intraembryonic mesoderm			Ectoderm	Endoderm
paraxial mesoderm	intermediate mesoderm	lateral plate mesoderm	<ul style="list-style-type: none"> > Neural Ectoderm > Neural tube, dorsal to notochord, gives central nervous system (brain & spinal cord). > Inner ear > DERIVATIVES OF THE NEURAL CRESTS > A special neuroectodermal cells dorsolateral to the neural tube. <ul style="list-style-type: none"> 1- Sensory Cells of the para-sympathetic ganglia ((Ciliary of 3rd, pterygopalatine and submandibular of 7th, Otic of 9th and enteric ganglia of 10th cranial nerves)) 2- Sensory Cells of the sympathetic ganglia 3- Sensory Cells of the dorsal root ganglia of the spinal nerves 4- Pia and arachnoid matters of the meninges (dura matter mesodermal in origin). 5- Schwann cells that form the myelin sheath around nerve axon 6- Chromaffin cells of the suprarenal medulla (cortex is mesoderm) 7- Pigment cells in the skin, iris and retina. > Surface ectoderm > Skin (hairs, nails and its glands). > The lining of all orifices that open in the skin • Eye, lacrimal gland and nasolacrimal duct. • Nose and paranasal sinuses. • Oral cavity, and salivary glands. • External auditory meatus and outer surface of the ear drum. • Lower 1/2 of the anal canal. • Terminal part of the male urethra in glans penis . 	<ul style="list-style-type: none"> > Derivatives of the endoderm • Mucous membrane of the tongue. • The epithelial lining of gastro-intestinal tract except the lower 1/2 of the anal canal oral cavity, and salivary glands (Ectoderm). • The liver cells, hepatic ducts and bile ducts. • Ducts and acini of the pancreas. • The epithelial lining of Respiratory system except Nose and paranasal sinuses (ecto). • The epithelial lining of Middle ear, Eustachian tube and mastoid antrum. • The epithelial lining of Urinary bladder (except trigone mesoderm) • The epithelial lining of female urethra • The epithelial lining of male urethra except part in glans penis (ectoderm) • Prostate and bulbourethral glands • Lower part of the vagina and Vestibular gland and • Cells of thyroid, parathyroid and thymus glands. • Palatine tonsils
<ul style="list-style-type: none"> • The paraxial mesoderm is divided into cubical masses called somites. • The end of 5 th week, These masses are 42-44 and are arranged as - 4 Occipital, 8 Cervical, 12 Thoracic, 5 Lumbar, 5 Sacral & 8-10 Coccygeal. • Later on the 1 st occipital and the last 5-8 coccygeal degenerate. • Each somite divides into 3 parts: <ul style="list-style-type: none"> 1. Ventromedial part (sclerotome): gives bones of the axial skeleton (vertebrae, and ribs) and bones of the base of the skull. 2. Intermediate part (myotome): gives rise to the skeletal muscles of the trunk, limbs and (occipital myotomes gives muscles of the tongue). 3. Dorsolateral part (dermatome): gives rise to the dermis and subcutaneous tissue of the skin 	<ul style="list-style-type: none"> - Gives most of the urogenital system 1- Kidney 2- Ureter 3- Trigone of urinary bladder - In Female Reproductive System: <ul style="list-style-type: none"> 1- Ovary 2- Uterine tube 3- Uterus 4- Upper part Vagina - In Male Reproductive System <ul style="list-style-type: none"> 1- Testes (primary sex gland) 2- Epididymis 3- Vas deferens 4- Ejaculatory duct 5- Seminal vesicle 	<ul style="list-style-type: none"> - Septum transversarium forms the central tendon of diaphragm - A single U-shaped cavity intraembryonic coelom in the lateral intraembryonic mesoderm. - It divides the lateral mesoderm into 2 layers outer parietal (somatic) layer and inner visceral (splanchnic) layer, It forms three cavities (pericardium, pleura and peritoneum). - The mesoderm in front the oral membrane gives cardiovascular system (heart and blood vessels). - The mesoderm in the region of the developing neck: 6 pharyngeal arches and their derivatives. - The mesoderm all over the body gives bones, muscles, joints, ligaments and blood vessels 		