

SIZE in millimeters	AGE in weeks	BODY FORM	MOUTH
2.5(A)	4(A)(J)	Neural groove deepens and closes(A) Somites appearing(A) Body constricted from broad yolk sac(A) Earliest branchial arches indicated(A)	Maxillary and mandibular processes prominent(A) Pharyngeal membrane ruptures
3-6(J) 5.5(A)	5(A)(J)	Nuchal flexure; body C shaped; amnion encloses narrow yolk stalk and body stalk to form umbilical cord(J) Branchial arches complete(A)* All somites present(A)(J) Flexed heart prominent(A)*	Tongue primordia present(A) Bathke's pouch forming(A) Deep stomodaeum(J) Oral membrane perforate(J)* Tuberulum impar(J) Porella Copula
7-10(J) 11.0(A)	6(A)(J)	Body markedly flexed(A) Umbilical cord forms(A) Tail prominent(A) Liver protuberance(A)* Limb buds(J) Heart and mesonephros prominent(J)†	Lingual primordia fusing(A)(J) Labio-dental laminae appear(A) Oro-nasal groove present(J) Liver protuberance(A)* Limb buds(J) Heart and mesonephros prominent(J)†
11-15(J) 17.0(A)	7(A)(J)	Dorsum becomes less curved(J)† Nuchal flexure straightening(J)† Limbs longer(J)† Digits starting on hand(J) Umbilical cord thicker and longer(J) Branchial arches lost(A) Face and neck forming(A)	Lingual primordia merge into single tongue(A) Salivary glands primordia(J) Separate labial and dental laminae distinguished(A) Jaws formed and begin to ossify(A)(J) Palate folds present(A)

PHARYNX AND DERIVATIVES	DIGESTIVE TUBE AND GLANDS
Pharynx broad and flat(A) Pharyngeal pouches forming(A) Thyroid a simple sac(A)	Pore and hind gut present(A) Yolk sac broadly attached at midgut(A) Liver bud present(A)
Pharynx wall developed(A) Fourth pharyngeal pouch with lateral thyroid primordium(J) Stomach a stalked bilobed sac(A) Median thyroid primordium(J) Primary tympanic cavity indicated(A)	Esophagus short(A) Stomach begins to be delimited(J) Stomach spindle shaped(A)* Intestine a simple tube(A)* Liver, duct and gall bladder(A)(J) Dorsal and ventral pancreas(A)(J)* Short tail gut(J) Large cloaca(J) Proctodaeum(J)
Pharyngeal pouches with dorsal and ventral diverticula(A) Labio-dental laminae appear(A) Ultimate branchial bodies(A)(J) Thymic sacs(J) Thyroid with persisting thyroglossal duct(J) Thyroid becomes solid and converts into plates(A)*	Esophagus short and atretic(J) Stomach rotating (A)(J)* Intestine with loop and showing torsion(A)† Cecum prominent(A)(J) Yolk sac detached from yolk stalk(J)
Thymus, parathyroid and ultimobranchial primordia distinct(A) Parathyroids become trabeculate and associate with thyroid(A) Thyroid becoming stragellata(A)	Stomach attains final shape(A)(J) Duodenum temporarily occluded(A) Intestinal loops herniate into cord(A) Rectum separates from cloaca(A) Pancreas (dorsal and ventral) fuses(A)(J) Appendix begins(J)

RESPIRATORY SYSTEM	UROGENITAL SYSTEM
Respiratory primordium, a groove on the floor of the pharynx(A)	All pronephric tubules formed Pronephric duct growing caudad as a blind tube(A)
Trachea and paired lung buds become prominent(A)(J)	Pronephric tubules appear and degenerate; pronephric duct reaches cloaca; mesonephric tubules as far as 25th segment(J)(A) Urethro-anal groove in proctodaeum(J) Cloacal membrane closed(J)
Definite pulmonary lobes indicated(A) First and second branching of lung buds(J)† Primordia of bronchi(J)†	Secretory and excretory primordia of metanephros evident(A) Sexless gonad and genital tubercle prominent(A) Mullerian duct appearing(A) Genital ridge; genital tubercle(J) Cloacal groove separated into urethral and anal grooves with raphe between.(J)
Larynx and epiglottis well outlined(A)(J) 3rd branching of bronchi(J) Lobes of lung indicated(J)	Mesonephros degenerating(A) Metanephros collecting tubules begin branching(A) Earliest metanephric secretory tubules differentiating(A) Urethral membrane ruptures(A) Ureter into cloaca; gonads differentiated(J)

VASCULAR SYSTEM	SKELTAL SYSTEM
Primitive blood cells and vessels present(A) Embryonic blood vessels, a paired asymmetrical system(A) Heart tubes fuse and blend S-shape(A)	Mesodermal segments appear(A) Older segments begin to show sclerotome(A) Notochord a cellular rod(A)
Paired aortae fuse(A) Aortic arches and cardinal veins completed(A)* Sinus, atrium, bulbus, septum I begins(A)(J)* Portal system present in liver	All mesodermal segments present(A) Sclerotome massed as primitive vertebrae around notochord(A)(J) Mesenchyme condensed at site of future bone(A)(J)
Aortic arches and vitelline veins transforming(A) Left umbilical vein and ductus venosus become important(A)† Primitive vessels extend into head and extremities Atrium, ventricle and bulbus partitioned(A) Septum I fused endocardial cushion(J)†	First appearance of chondrification centers(A) Site of future bones outlined in mesenchyme(J)†
Blood formation in liver(A)(J) Inferior vena cava outlined(A)(J) Heart partitioned except atrium, valves present(A) 6th aortic arch on the right degenerates, sinus venosus taken into the right atrium, septum II larger(J)	Basis crani cartilage vertebrae, ribs, scapulae radius, ulna, humerus, in cartilage stage. Meckel's cartilage in lower jaw(J) Chondrification more general(A)

MUSCULAR SYSTEM	NERVOUS SYSTEM
Mesodermal segments appearing(A) Older segments show myotome plates(A)	Neural groove closing(A) Neural crest a continuous band(A)
All mesodermal segments present(A) Myotomes differentiating from somites(J)	Neural tube closed(A) Telencephalon, diencephalon and rhombencephalon Ganglia of V, VII, VIII, IX nerves(J)(A)*
Myotomes fuse into continuous column and spread ventrad(A) Muscle segmentation largely lost(A) Myotomes forming premuscle masses(J)(A)†	Five brain vesicles(A)†(J) Rendymal, mantle and marginal layers well represented(A)† Cerebrospinal nerves and ganglia present(A)(J) Sympathetic ganglia forming(A)(J)
Muscles differentiating rapidly throughout body and assuming final shape and relations(A) Premuscle masses in the back(J) Muscle masses in upper extremities(J)	Cerebral hemispheres prominent(A) Suprarenal medulla begins invading cortex(A) Both primordia of hypophysis lie in position(A)† Regions of spinal cord more sharply defined(J)

SENSE ORGANS	COELOM AND MESENTERIES	SIZE in millimeters	AGE in weeks
Optic and auditory placodes indicated(A) Acoustic ganglia appearing(A)	Embryonic coelom appears and becomes a U-shaped canal(A) Septum transversum indicated(A) Mesenteries forming(A)	2.5(A)	4(A)(J)
Optic and lens cups formed(A)(J)* Otoey, a closed detached sac(A) Olfactory placodes present(A)* Nerves arise from them(A)	Coelom continuous cavity(A) Septum transversum opposite 3rd cervical segment(J) Omental bursa indicated(A) Primitive mesenteries prominent(J)	3-6(J) 5.5(A)	5(A)(J)
Lens vesicle detaches(A)(J) Retinal pigment appears(A)(J)† Floral and pericardial cavities totally partitioned(A) Phrenic nerve enters septum transversum as it passes 5th cervical segment(J)	Fluro-pericardial and pleuro-peritoneal membranes form(A)(J)† Floral and pericardial cavities totally partitioned(A) Phrenic nerve enters septum transversum as it passes 5th cervical segment(J)	7-10(J) 11.0(A)	6(A)(J)
Nerve fibers invade optic stalk(A) Eyelids forming(A)(J) Meso-lacrimal ducts appear(A) Olfactory sacs open into mouth cavity(A) Cornea, sclera, choroid, anterior chamber, iris present(A)(J)	Pericardium extended by splitting from body wall(A)(J) Mesentery expanding equally with coiled intestine(A) Ligaments of liver prominent(J) Ventral ligament degenerated caudad to liver(A)	11-15(J) 17.0(A)	7(A)(J)

10-21 10.0(A)	8(A)(J)	Dorsum straight(J) Nuchal flexure directed forward(J) Nose flat, eyes far apart(A)(J) Digits well formed(A)(J) Tail regressing(A)(J) Growth of gut makes body evenly rotund(A)	Tongue primordia upfolded(J) Musculature begins(J)(A) Palatal processes begin(J) Tooth germs(J) Bathke's pouch envelopes infundibulum(J) Taste buds(A) Sublingual gland(A)
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Thyroid branched, tonsil(J) Thymus reaches pericardium(J) Auditory tube and tympanic cavity differentiated(A) Thymic lobes unite and become solid(A) Thyroid follicles(A)	Lumen esophagus and duodenum opened(J) Stomach rotated to frontal position(J) Ileocecal valve, primordia intestinal glands, muscle in esophagus, stomach, duodenum and rectum, anus closed(J) Appendix indented(A) Intestinal villi
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Larynx atretic, cartilage in wall of larynx and trachea; epiglottis more prominent(J) 4th-7th branching of the bronchi(J) Lung gland like(A) Nuchal folds closed by epithelial plates(A)	Mesonephric tubules degenerating Cloaca; urogenital sinus separated from rectum(J) Urogenital sinus open(J) Gonads larger(J) External genitalia
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Main blood vessels assume final plan(A) Arteries; right dorsal aorta from 14th arch to union with left gone, common carotids and subclavians definite(J) Veins; suprarenals present, post-cardinals degenerating(J) Atrio-ventricular bundle(A)(J)	First indications of ossification(A)
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Definitive muscles of trunk, limbs and head well represented and legs capable of some movement(A) Muscles outlined and with definite relations(J)	Cerebral cortex begins to acquire typical cells(A) Ventricles wide, corpus striatum and thalamus begin, caudal end of spinal cord degenerated(J)
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Lens loses cavity(A) Lacrimal glands indicated(A) External, middle and internal ear assume final form(A)(J)	Floral and peritoneal cavities partitioned(A)(J) Diaphragm complete including (A)(J) musculature(A)(J) Diaphragm finishes descent(A)(J)	16-21(J) 25.0(A)	8(A)(J)
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TABLE I

HUMAN EMBRYONIC DEVELOPMENT FROM 5 - 8 WEEKS

Legend:

- (A) - Arey(1).
- (J) - Jordan and Kindred(5).
- \* - First embryo.
- † - Second embryo.