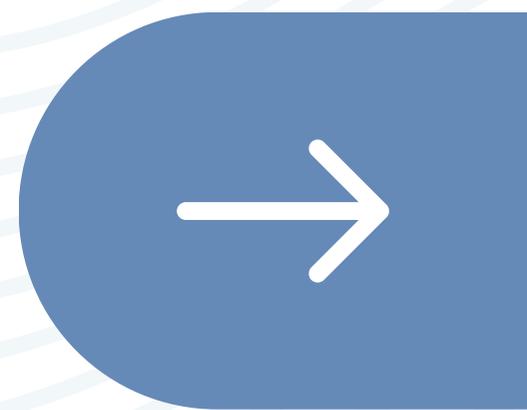


# #DIBS BY NEXTILLO

DAILY INFORMATION BULLETIN SERVICE

**NEURAL CREST DERIVATIVES**





# #DIBSBYNEXTILLO

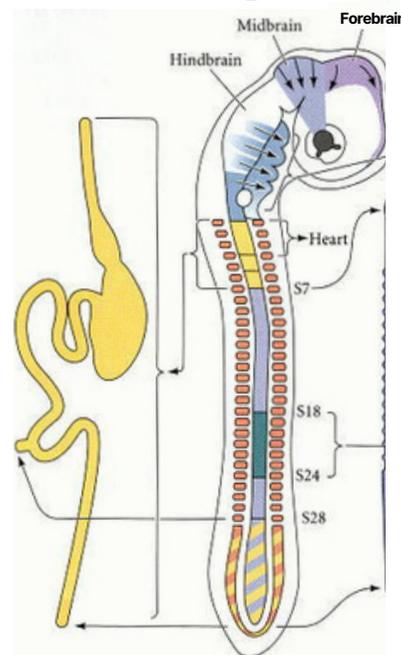
DAILY INFORMATION BULLETIN SERVICE

## NEURAL CREST DERIVATIVES

*The neural crest, a unique transient embryonic cell population, as a group of cells localized in between the neural tube and the epidermis in the vertebrate embryo. Neural crest cells originate in the ectoderm at the margins of the neural tube.*



# IMAGE DESCRIPTION



## **REGIONS OF THE EMBRYO NEURAL CREST MIGRATE.**

- The cranial neural crest cells migrate into the branchial arches and the face to form the bones and cartilage of the face and neck.
- It also produces pigment and cranial nerves.
- The vagal neural crest cells (near somites 1–7) and the sacral neural crest cells (posterior to somite 28) form the parasympathetic nerves of the gut.
- The cardiac neural crest cells arise from the neural crest by somites 1–3; they are critical in making the division between the aorta and the pulmonary artery.
- Neural crest cells of the trunk (about somite 6 through the tail) make the sympathetic neurons, and a subset of these (at the level of somites 18–24) form the medulla portion of the adrenal gland.



# EMBRYOLOGY OF NEURAL CREST CELLS

*These cell types include :*

- *The neurons and glial cells of the sensory, sympathetic, and parasympathetic nervous systems,*
- *The epinephrine-producing (medulla) cells of the adrenal gland,*
- *The pigment-containing cells of the epidermis, and*
- *Many of the skeletal and connective tissue components of the head. The fate of the neural crest cells depends, to a large degree, on where they migrate to and settle.*



# MIGRATION PATHWAYS

- *Cells migrate dorsolaterally to produce the craniofacial mesenchyme that differentiates into the cartilage, bone, cranial neurons, glia, and connective tissues of the face.*
- *These cells enter the pharyngeal arches and pouches to give rise to thymic cells, odontoblasts of the tooth primordia, and the bones of middle ear and jaw.*
- *Neural crest cells that become the pigment-synthesizing melanocytes.*
- *Sclerotomes are blocks of mesodermal cells.*



# MAJOR NEURAL CREST DERIVATIVES

- *The vagal and sacral neural crest, whose cells generate the parasympathetic (enteric) ganglia of the gut.*
- *The vagal (neck) neural crest lies opposite somites 1–7, while the sacral neural crest lies posterior to somite 28.*
- *The cardiac neural crest is located between the cranial and trunk neural crests.*



# MCQ

## **Question:**

***Q. All are derivatives of ectoderm except***

- A.) Epidermis*
- B.) Parotid gland*
- C.) Neurohypophysis*
- D.) Arrector Pili*

***Ans - D.) Arrector Pili***