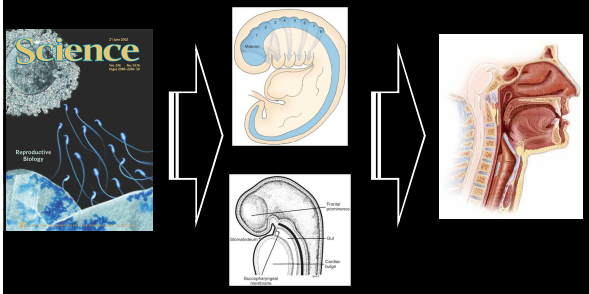
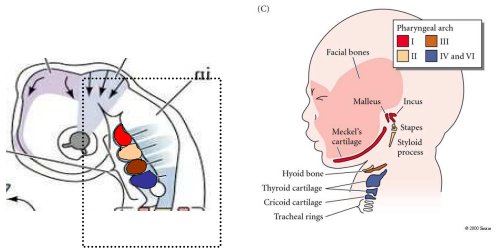
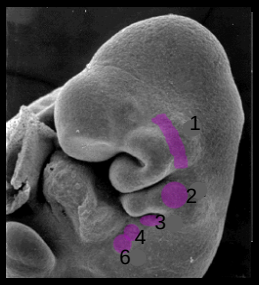
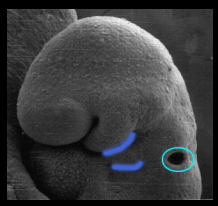
Sexta passada | Aula de HOJE



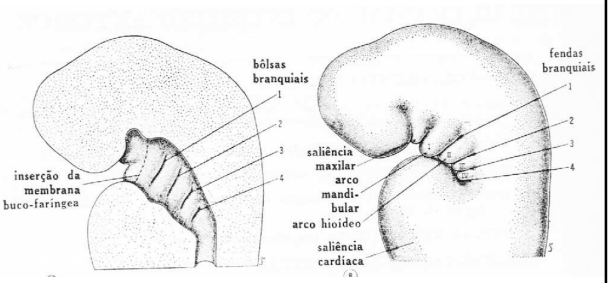
As Estruturas Faciais derivam primariamente dos Arcos Branquiais



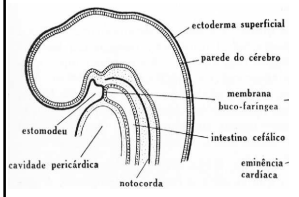


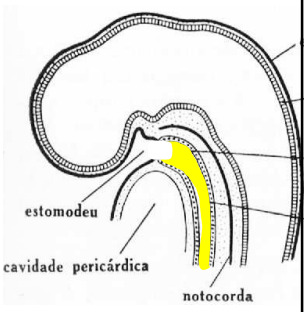


Os Arcos Branquiais são separados por Fendas

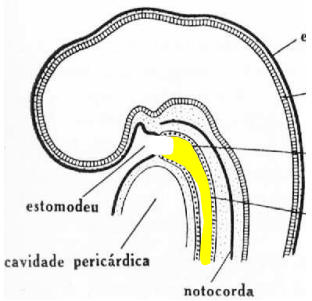


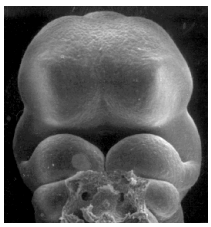
O ESTOMODEU (ou boca primitiva) se forma após o rompimento da MEMBRANA BUCOFARÍNGEA





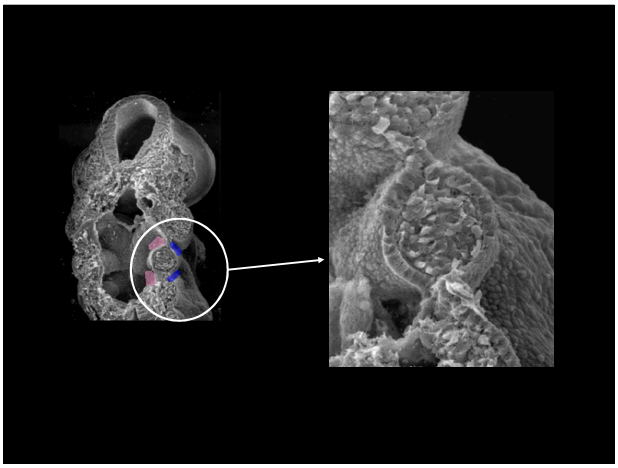
O ESTOMODEU (ou boca primitiva) se forma após o rompimento da MEMBRANA BUCOFARÍNGEA

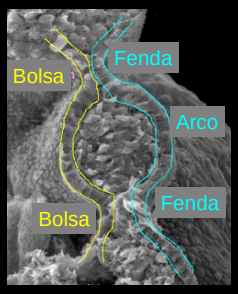


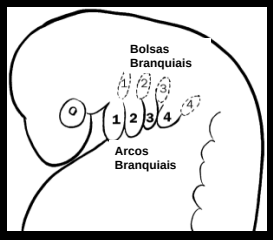


A membrana bucofaríngea é formada por:
a) Ecto, meso e endoderma
b) Ectoderma
c) Ecto e endoderma
d) Mesoderma e Mesênquima

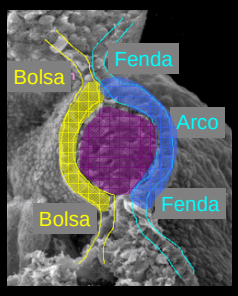
A membrana bucofaríngea é formada por:
a) Ecto, meso e endoderma
b) Ectoderma
c) Ecto e endoderma
d) Mesoderma e Mesênquima







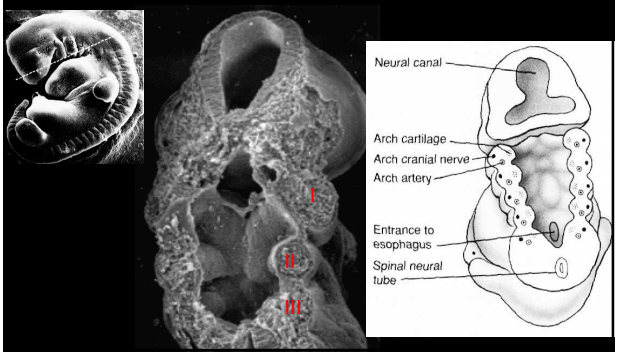
Para cada Arco Branquial, há uma Bolsa Branquial Endodérmica intercalada interiormente



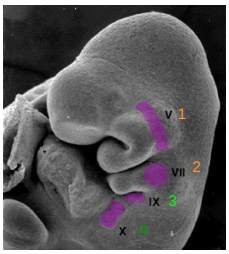
Cada Arco Branquial é forrado por Ectoderma na superfície externa, e Endoderma na superfície interna. O "recheio" é mesênquimal, de origem mesodérmica e de cristas neurais.

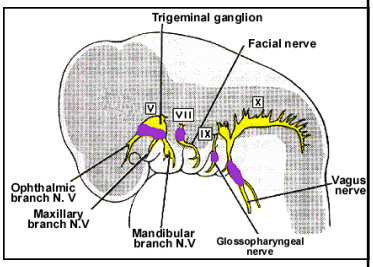
Todo arco branquial tem associado:

1 arco cartilaginoso (estrutural) + 1 nervo craniano (inervação)+ 1 artéria (vascularização)

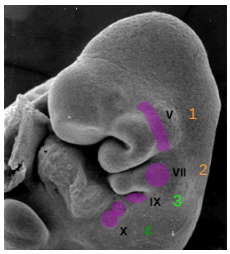


A correspondência de cada Arco Branquial a um nervo craniano

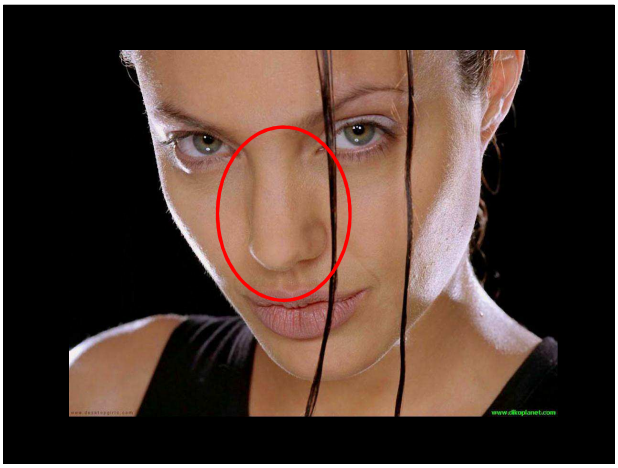


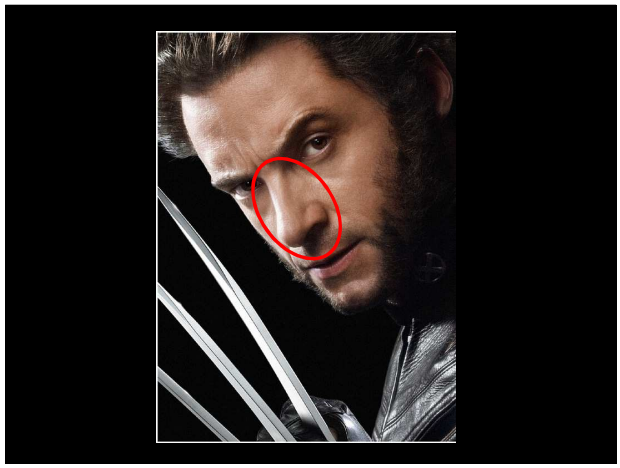


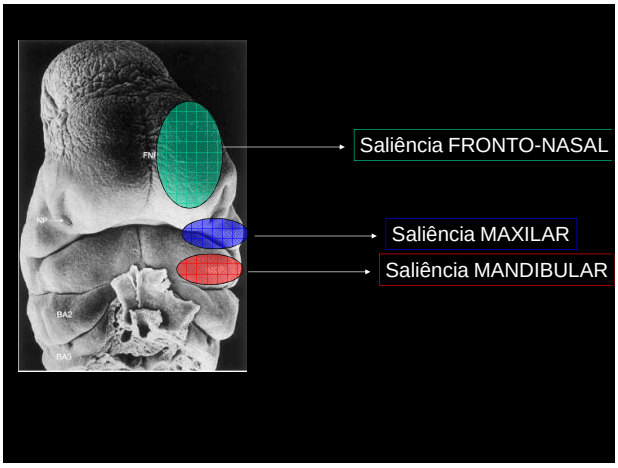
Arco	Nervo
1	V= Trigeminal
2	VII=facial
3	IX=Glossofaríngeo
4	X=Vago

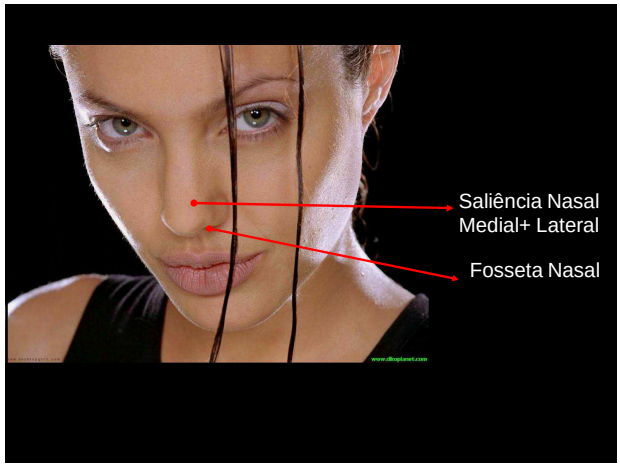


ARCO	Ouvido/ Orelha	Nariz	Palato	Língua
Eminência Frontal (0)				
1 (V)				
2 (VII)				
3 (IX)				
4 (X)				

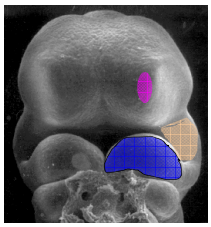


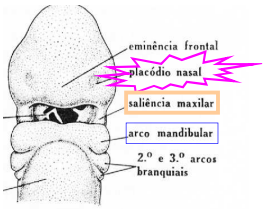






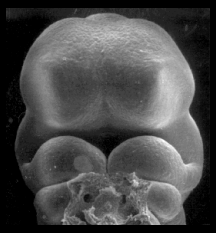
O Plácódio Nasal fica na Eminência Frontal

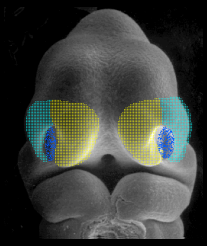




Obs: Arco Mandibular = arco branquial 1

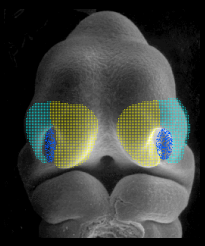
Invaginação do Placódio Nasal

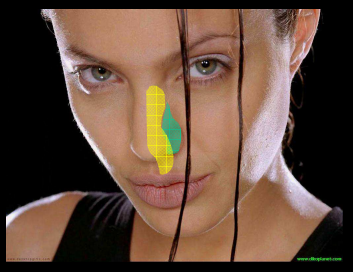




A invaginação forma a Saliência Nasal:
- Saliência Nasal Medial
- Saliência Nasal Lateral
- Fosseta Nasal

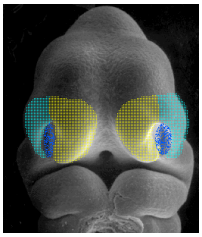
As Saliências Nasais Mediais se Fundem, formando o Nariz e definindo o Lábio Superior

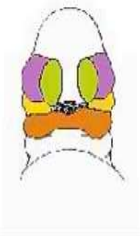




Saliência Nasal Medial
Saliência Nasal Lateral

http://www.biomed2.man.ac.uk/ugrad/biomedical/calpage/sproject/rob/week4.html

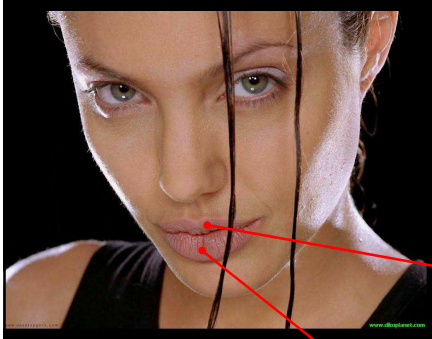




As Saliências Nasais Mediais se Fundem, formando o Nariz e definindo o Lábio Superior

Saliência Nasal Medial
Saliência Nasal Lateral
Processo Maxilar

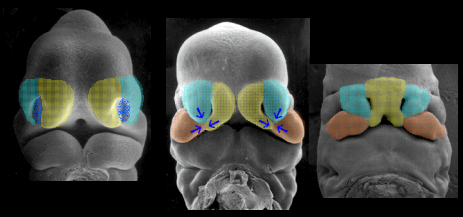
http://www.biomed2.man.ac.uk/ugrad/biomedical/calpage/sproject/rob/week4.html



S.Nasal Medial+
S. Maxilar

1º Arco

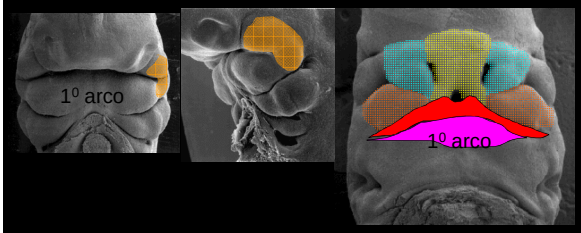
As Saliências Nasais Mediais se Fundem, formando o Nariz e definindo a parte central do Lábio Superior



Saliência Nasal Medial
Saliência Nasal Lateral
Processo Maxilar

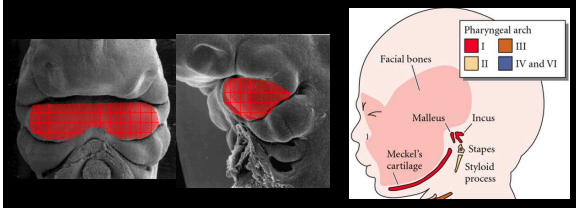
http://www.biomed2.man.ac.uk/ugrad/biomedical/calpage/sproject/rob/week4.html

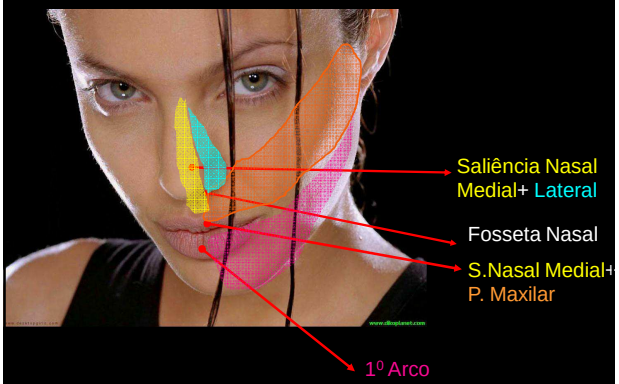
O lábio Superior é formado pela Saliência Nasal Medial+Processo Maxilar



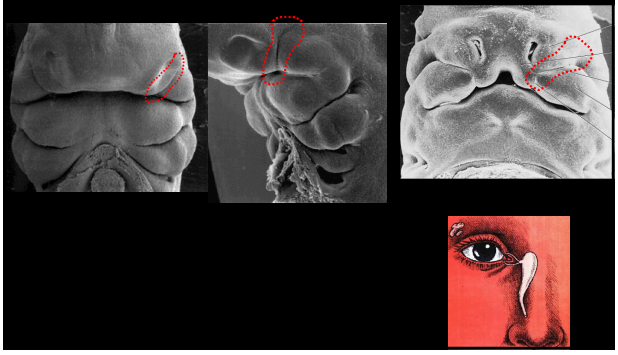
Dica : O Lábio Inferior vem da saliência Mandibular (= 1º arco)

O Primeiro Arco Branquial dá origem ao LÁBIO INFERIOR e ao OSSO MANDIBULAR





O SULCO NASOLACRIMAL forma a DUTO LACRIMAL

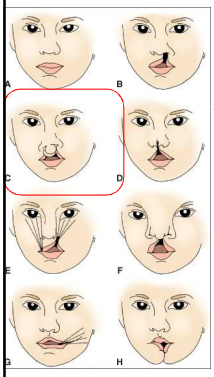


Estão implicados no desenvolvimento da face:

a) primeiro arco e o processo frontonasal
b) segundo arco e o processo frontonasal
c) exclusivamente o primeiro arco branquial
d) o primeiro segundo e terceiro arcos

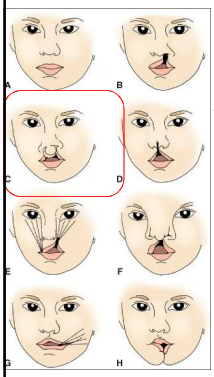
Estão implicados no desenvolvimento da face:

a) primeiro arco e o processo frontonasal
b) segundo arco e o processo frontonasal
c) exclusivamente o primeiro arco branquial
d) o primeiro segundo e terceiro arcos



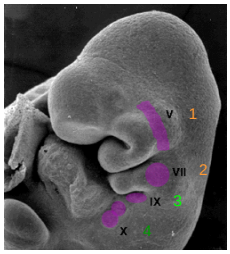
Defeito na fusão de:

A) Saliência nasal Medial esq e dir.
B) Saliência Nasal Medial e Proeminência Maxilar
C) Primeiro arco branquial
D) Saliência nasal Medial e lateral (ambos lados)

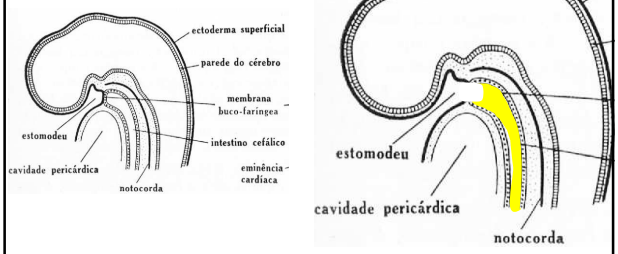


Defeito na fusão de:

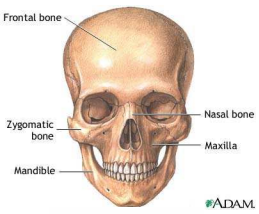
A) Saliência nasal Medial esq e dir.
B) Saliência Nasal Medial e Proeminência Maxilar
C) Primeiro arco branquial
D) Saliência nasal Medial l e lateral (ambos lados)

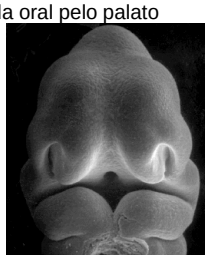


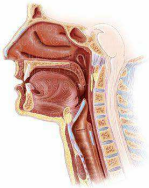
ARCO	Ouvido/ Orelha	Nariz	Palato	Língua
Eminência Frontal (0)		Fossetas Nasais		
Processo maxilar		Lábio Superior		
1 (V)		Lábio Inferior, Mandíbula		
2 (VII)				
3 (IX)				
4 (X)				



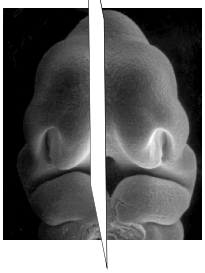
A cavidade nasal é separada da oral pelo palato

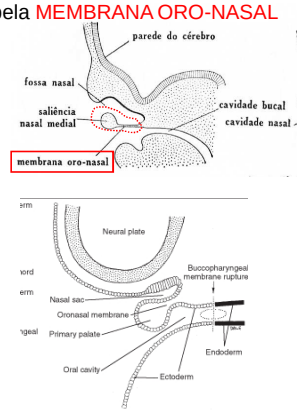




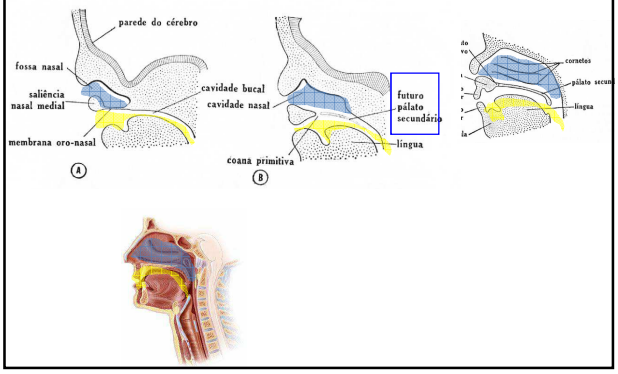


Inicialmente, a Cavidade Bucal é separada da Fossa Nasal pela MEMBRANA ORO-NASAL

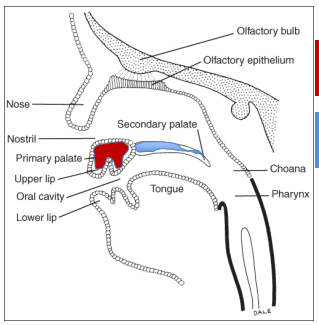




A Membrana Oronasal é lentamente substituída pelo PALATO SECUNDÁRIO ou definitivo

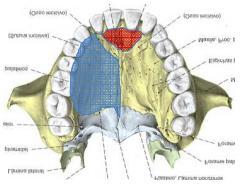


O palato formado tem duas origem: Sal. Nasal Medial e Processo maxilar

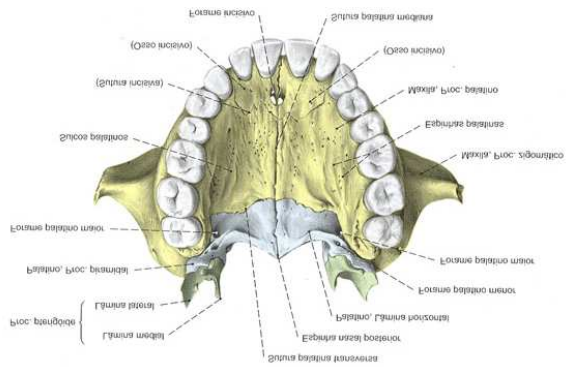


Palato Primário: Saliência nasal medial

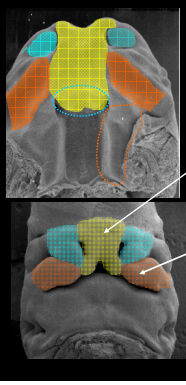
Palato Secundário: Processo maxilar



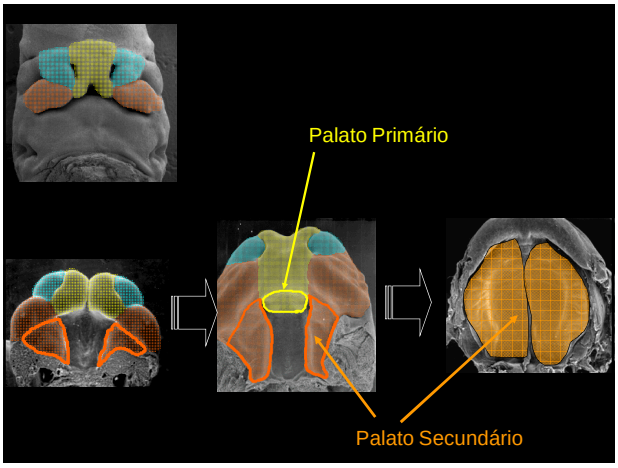
Palato



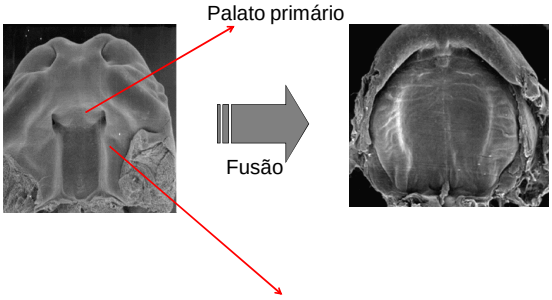
Formação do PALATO



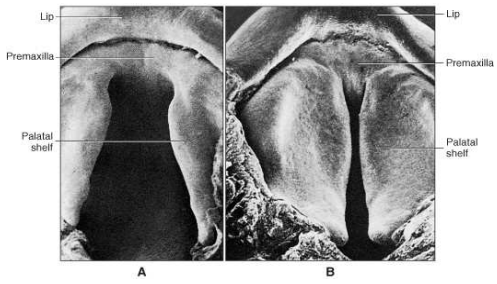
1. O Palato Primário origina do da fusão da Saliência Nasal Medial (Segmento Intermaxilar);
2. O Palato Secundário, ou Definitivo, origina das CRISTAS PALATINAS, que partem dos Processos Maxilares



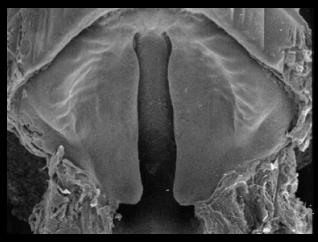
O Palato Secundário é formado pela fusão das CRISTAS PALATINAS, que vêm do Processo Maxilar



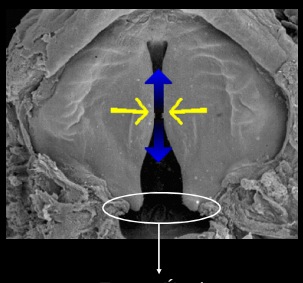
O Palato Secundário é formado pela fusão das CRISTAS PALATINAS, que vêm do Processo Maxilar

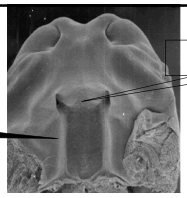


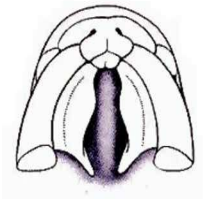
A Fusão se inicia na porção mediana do Palato



A Fusão se inicia na porção mediana do Palato

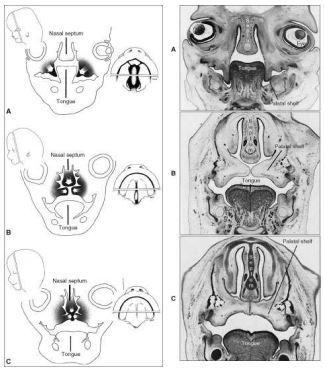






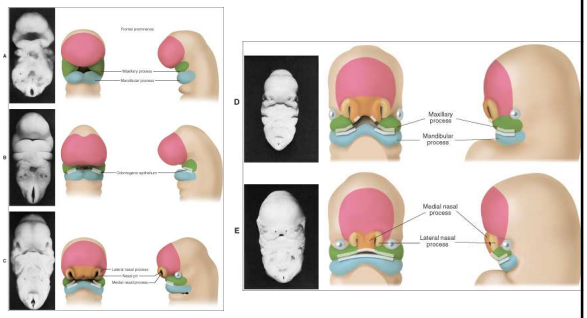
O Palato Secundário é formado pela fusão das CRISTAS PALATINAS, que vêm do Processo Maxilar

O Palato Secundário é formado pela fusão das CRISTAS PALATINAS, que vêm do Processo Maxilar

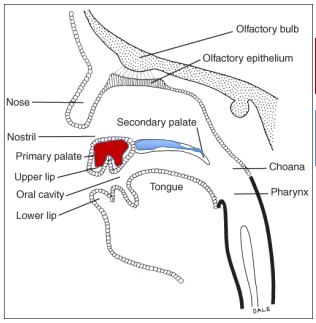


A linha de fusão fica na região mediana do palato

Os precursores dentais acompanham o desenvolvimento da maxila e mandíbula

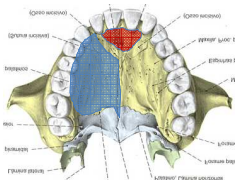


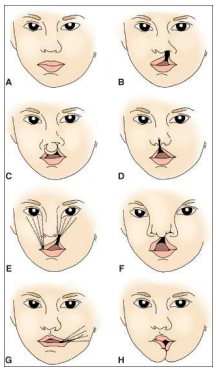
O palato formado tem duas origem: Sal. Nasal Medial e Processo maxilar

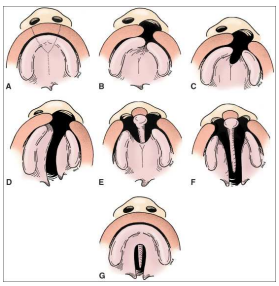


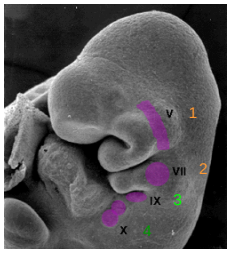
Palato Primário: Saliência nasal medial

Palato Secundário: Processo maxilar

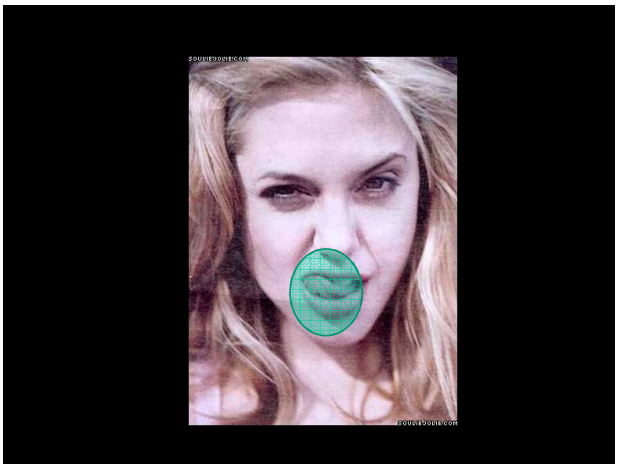


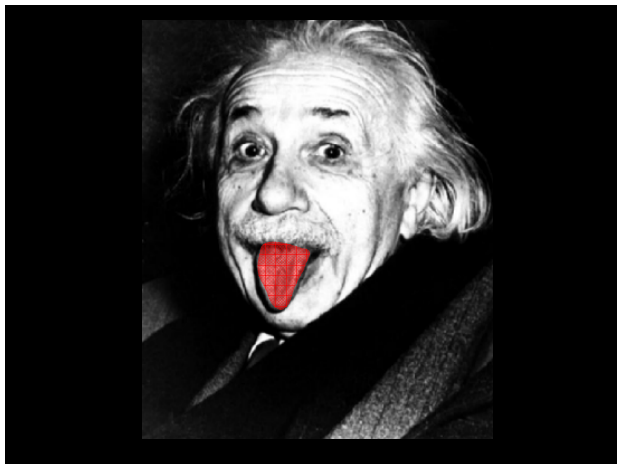


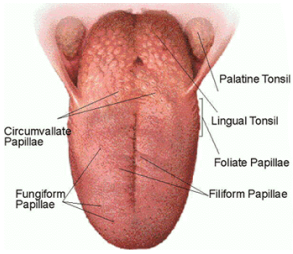




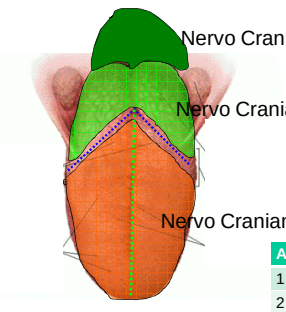
ARCO	Ouvido/ Orelha	Nariz	Palato	Língua
Eminência Frontal (0)		Placódios Nasais		
Processo maxilar			Cristas Palatinas	
1 (V)		Lábio Inferior, Mandíbula		
2 (VII)				
3 (IX)				
4 (X)				





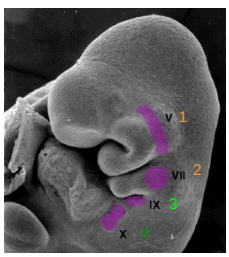


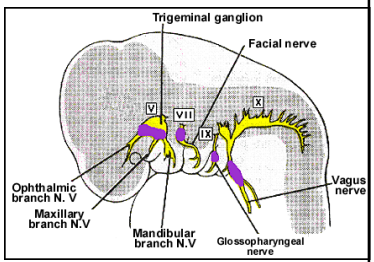
Como ocorre a inervação <u>sensitiva</u> da língua?



Arco	Nervo
1	V= Trigeminal
2	VII=facial
3	IX=Glossofaríngeo
4	X=Vago

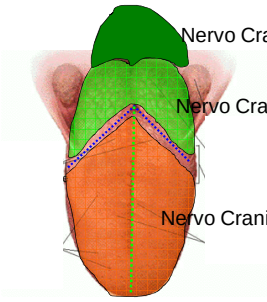
A correspondência de cada Arco Branquial a um nervo craniano





Arco	Nervo
1	V= Trigeminal
2	VII=facial
3	IX=Glossofaríngeo
4	X=Vago

Como ocorre a inervação <u>sensitiva</u> da língua?



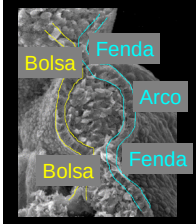
Nervo Craniano X= arco4

Nervo Craniano IX = arco 3

Nervo Craniano V e VII = arco 1+2

Arco	Nervo
1	V= Trigeminal
2	VII=facial
3	IX=Glossofaríngeo
4	X=Vago

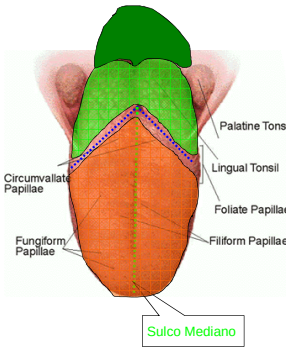
Origens Embrionárias dos tecidos da língua:

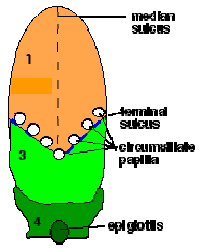


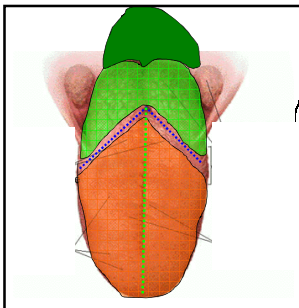
Mucosa: Bolsas Branquiais = ENDODERMA

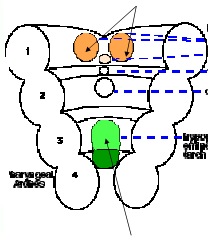
Músculo: MESODERMA

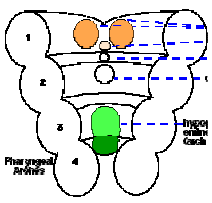
A língua é formada pela fusão de componentes do 1^0, 3^0 e 4^0 Arcos Branquiais

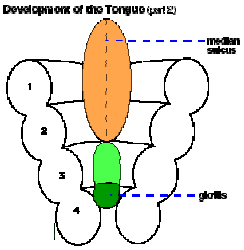


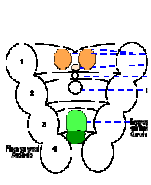


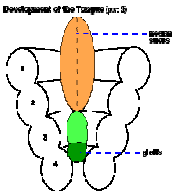


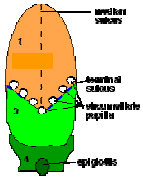




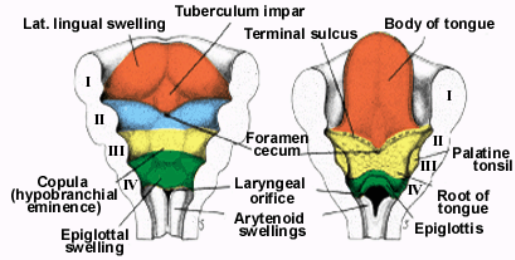


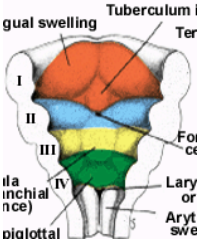




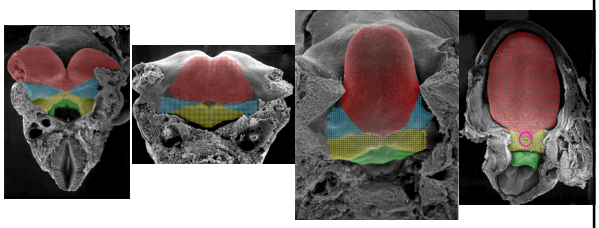


E o SEGUNDO Arco Branquial???

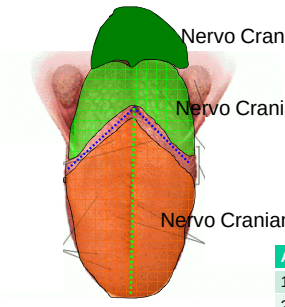




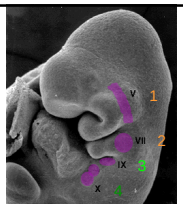
O Crescimento da Eminência Hipobranquial COBRE o segundo arco Branquial

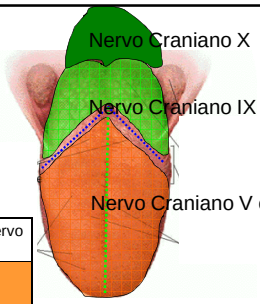


Como ocorre a inervação sensitiva da língua?



Arco	Nervo
1	V= Trigeminal
2	VII=facial
3	IX=Glossofaríngeo
4	X=Vago

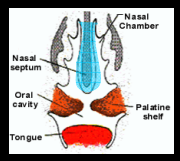


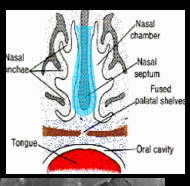


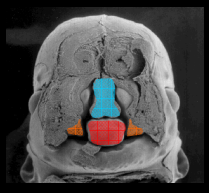
Arco			Nervo
1	Saliência Lingual Lat.	CORPO	V
2			VII
3	Eminência Hipobranquial	BASE	IX
4	Epiglote	Epiglote	X

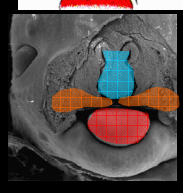
V= Trigeminal
VII=Facial
IX= Glossofaríngeo
X=Vago

Frontalmente, as Cristas Palatinas crescem primeiro em direção à Língua, mas depois sobem e se fundem com o Septo Nasal

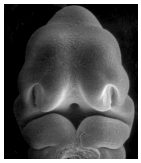


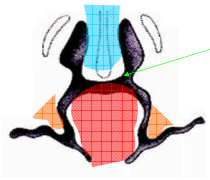






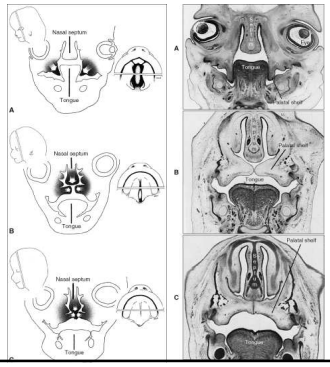
Frontalmente, as Cristas Palatinas crescem primeiro em direção à Língua, mas depois se fundem com o Septo Nasal



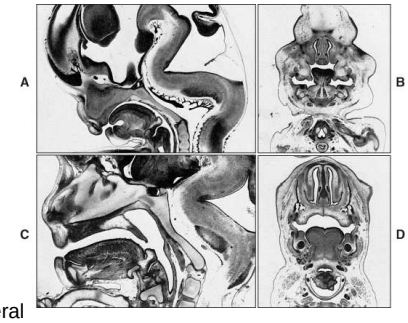


Frontalmente, as Cristas Palatinas crescem primeiro em direção à Língua, mas depois se fundem com o Septo Nasal

Visão frontal

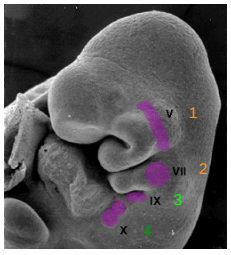


Durante o desenvolvimento da lingua, o embrião levanta a cabeça, permitindo a expansão da língua e da mandíbula

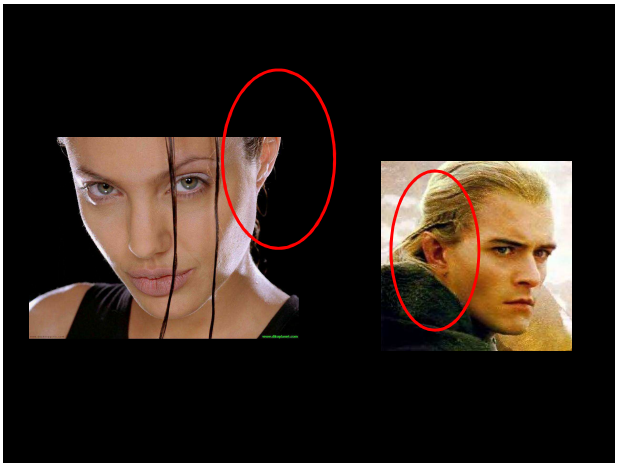


Visão lateral

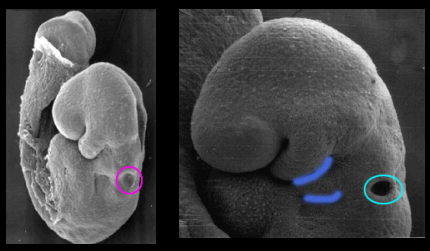
filme

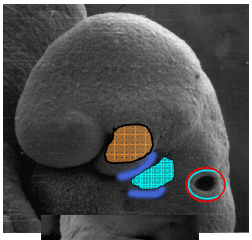


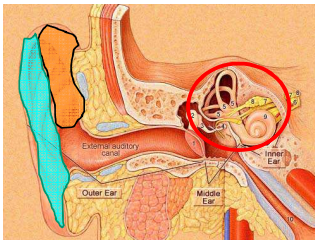
ARCO	Ouvido/ Orelha	Nariz	Palato	Língua
Eminência Frontal (0)		Fossetas Nasais		
Processo maxilar		Lábio Superior	Cristas Palatinas	
1 (V)		Lábio Inferior, Mandíbula		Corpo
2 (VII)				Corpo
3 (IX)				Base
4 (X)				Epiglote

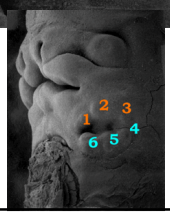


Os placódios óticos/auditivos surgem no ECTODERMA perto do SEGUNDO arco branquial

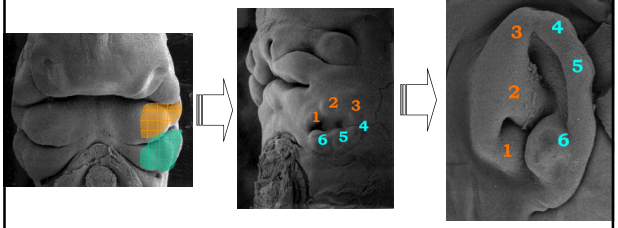






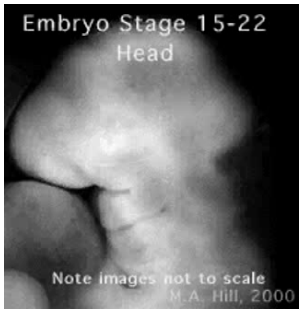


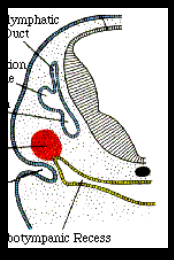
O Pavilhão auditivo é formado do 1º e 2º arcos

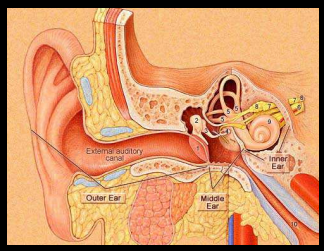


Filme do Pavilhão

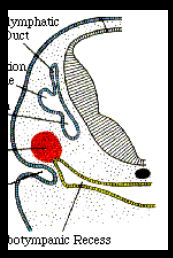
Durante o desenvolvimento o pavilhão auditivo migra dorsalmente e anteriormente

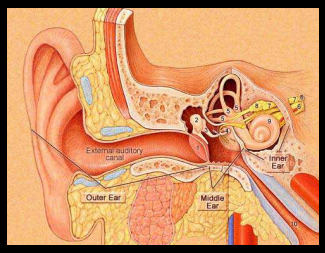




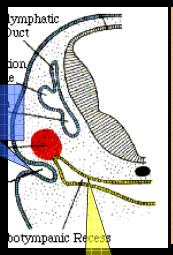


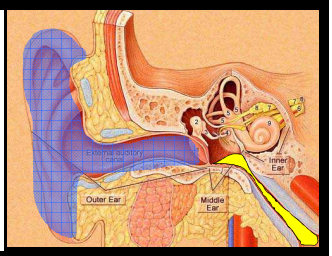
A CAVIDADE TIMPÂNICA é formado a partir de uma evaginação da PRIMEIRA BOLSA BRANQUIAL





O CANAL AUDITIVO é formado a partir de uma invaginação da PRIMEIRA FENDA BRANQUIAL



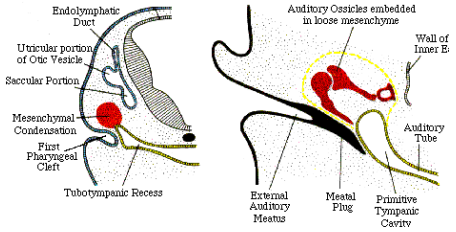


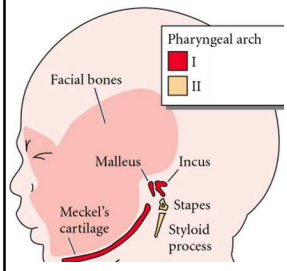
Primeira Fenda Branquial

Primeira Bolsa Branquial

Canal Auditivo Externo
Cavidade Timpânica
Trompa de Eustáquio

Os ossos timpânicos se formam do mesênquima do PRIMEIRO e SEGUNDO ARCO BRANQUIAL

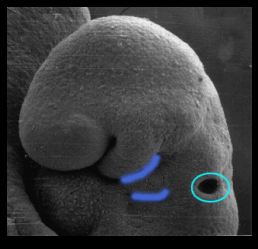




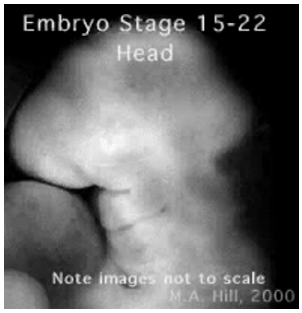
ARCO I → MARTELO BIGORNA

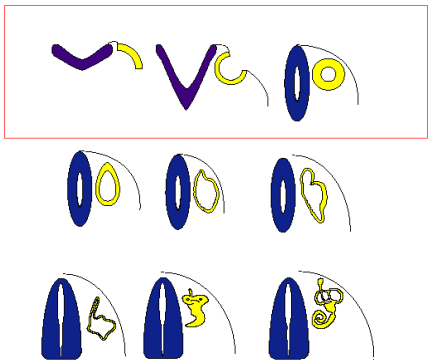
ARCO II → ESTRIBO

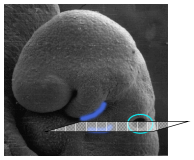
Os placódios óticos/auditivos surgem no ECTODERMA perto do SEGUNDO arco branquial

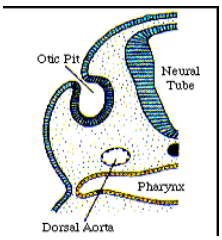


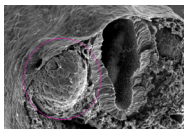
Durante o desenvolvimento o ouvido interno sai da superfície e se aprofunda no corpo

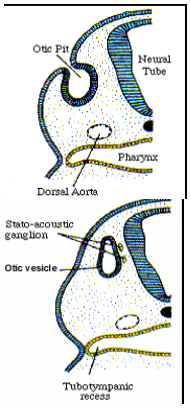


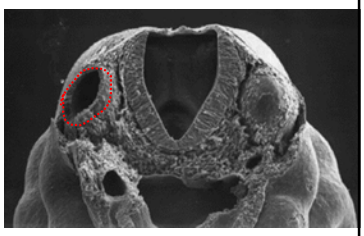


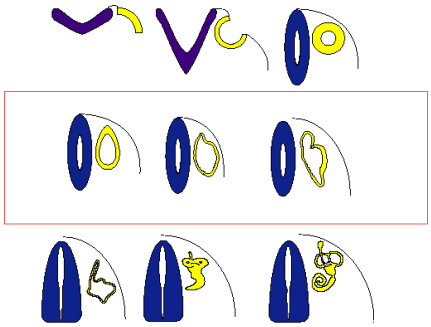




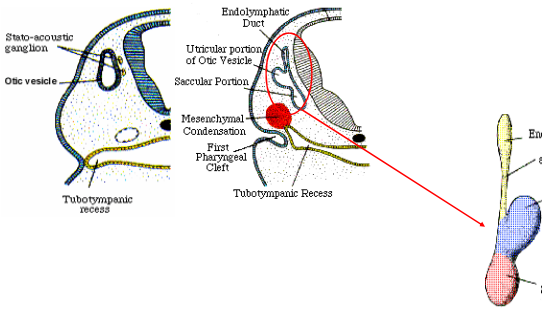


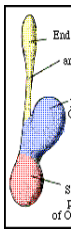


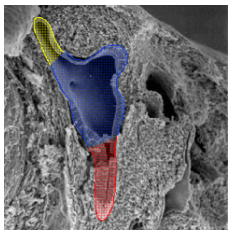




Segmentação da Vesícula Ótica

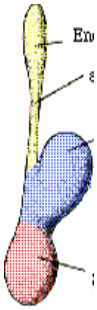






Região Endolinfática
Região Utricular
Região Sacular

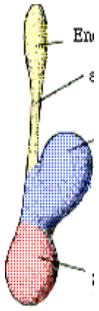
A Vesícula ótica origina o OUVIDO INTERNO

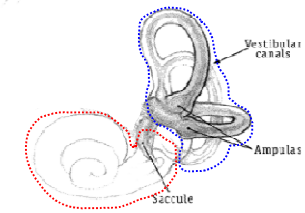


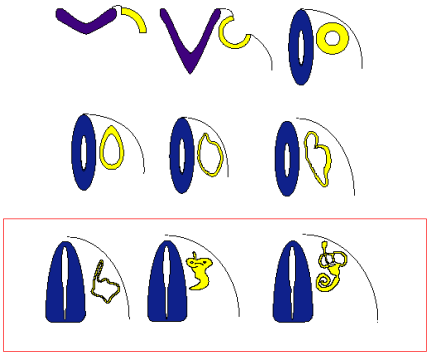
Região Endolinfática → Duto Endolinfático

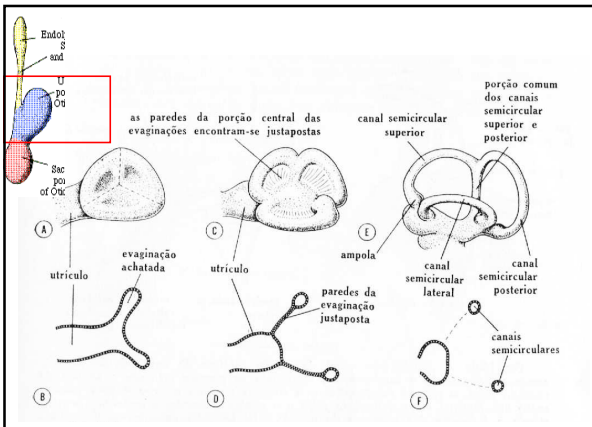
Região Utricular → Utrícula
Dutos Semicirculares

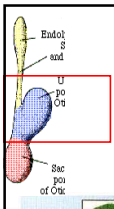
Região Sacular → Canal Coclear
Órgão de Corti



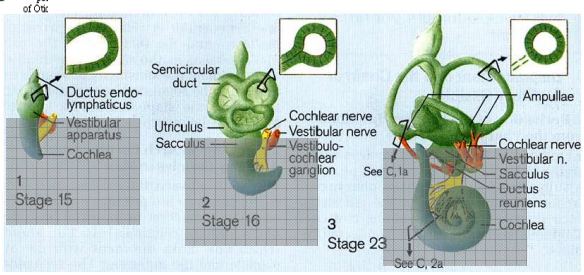




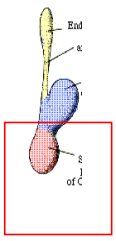


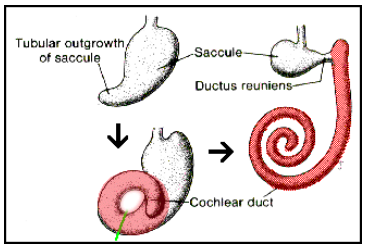


Formação dos DUTOS SEMICIRCULARES

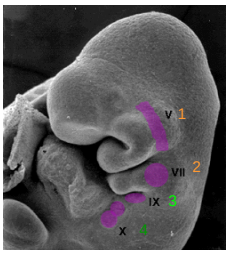


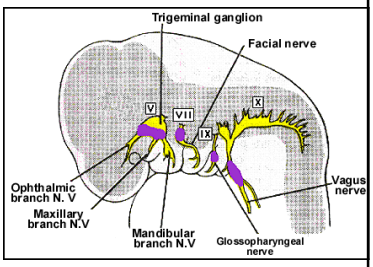
Formação do DUTO COCLEAR



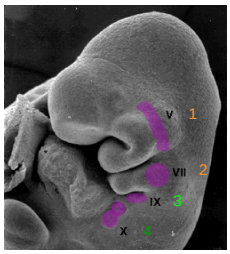


A correspondência de cada Arco Branquial a um nervo craniano

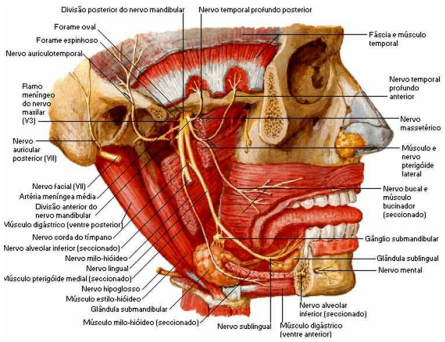




Arco	Nervo
1	V= Trigeminal
2	VII=facial
3	IX=Glossofaríngeo
4	X=Vago



ARCO	Ouvido/ Orelha	Nariz	Palato	Língua
Eminência Frontal (0)		Placódios Nasais	Cristas Palatinas	
1	Martelo Bigorna Pavilhão	Lábio Inferior, Mandíbula		Corpo
2	Estribo Pavilhão			Corpo
3				Base
4				Epiglote



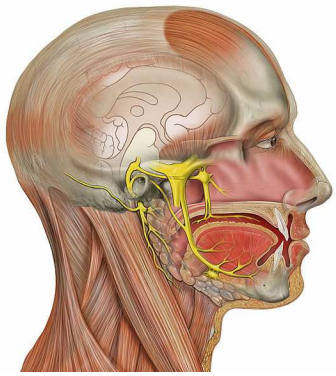
www.portalsaofrancisco.com.br

TRIGEMINAL (V) INERVA:

Músculos da mastigação

Tensor do Palato

Sublingual

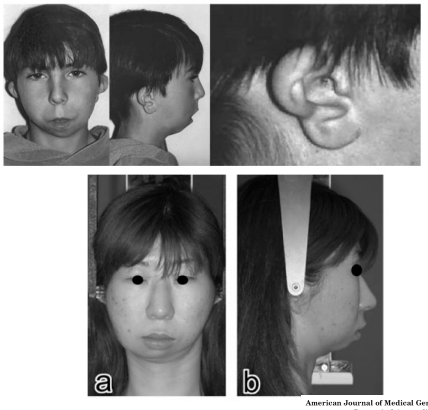


TRIGEMINAL (V) INERVA:

Músculos da Expressão Facial

ARCO	Ouvido/Orelha	Nariz	Palato	Língua	NERVO	Músculos
Eminência Frontal (0)		Placódios Nasais	Cristas Palatinas			
1	Martelo Bigorna Pavilhão	Lábio Inferior, Mandíbula		Corpo	V	De Mastigação
2	Estribo Pavilhão			Corpo	VII	Da expressão Facial
3				Base	IX	Estilo Faríngeo
4				Epiglote	V	Constritores da Laringe

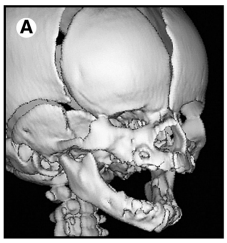
Porque EMBRIOLOGIA?



American Journal of Medical Genetics 138A:141–145 (2005)

Síndrome de Goldenhar

Causado por anomalias na migração de crista neural na 4ª semana.



Goldenhar syndrome results from a deficiency in the developing frontonasal and maxillary prominences. This deficiency is likely caused by abnormal neural crest cell migration or a local ischemic insult during the fourth week of gestation.

The facial phenotype of Goldenhar syndrome is usually characteristic. The classic facial defects are hemi-facial microsomia with ipsilateral micrognathia and macrostomia (Fig. 21). There is usually hypoplasia of the mandibular ramus and condyle. The zygomatic arch is absent or flat. Ocular manifestations other than epibulbar dermoid cyst include colobomas, and microophthalmia.

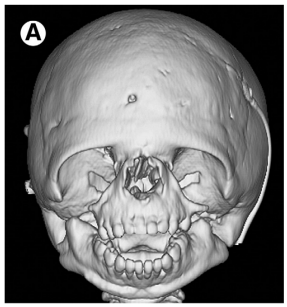
There are diverse external and middle ear anomalies. The classic appearance is a preauricular skin tag and microtia. External auditory canal and ossicular atresia are common. Approximately 50% of patients have conductive hearing loss. Cervical vertebral fusions occur in up to 60% of cases. Several intracranial anomalies, including dysgensis of the corpus callosum, holoprosencephaly, and sincipital encephaloceles have been reported.

Síndrome de Treacher Collins

Causado por morte celular anormal de crista neural.

Afeta principalmente o primeiro arco branquial.

Que estruturas serão afetadas??



Treacher Collins Syndrome

TCS results from mutations in the Treacher Collins-Franceschetti syndrome 1 (*TCOF1*) gene located on chromosome 5q.[22] It is inherited in an autosomal-dominant fashion with variable penetrance. Deficient function of the gene product, named Treacle, leads to apoptosis of neural crest cells during early craniofacial development. This subsequently causes a bilaterally symmetric malformation of structures derived from the first pharyngeal arch. TCS is also referred to as mandibulofacial dysostosis.

Most patients with Treacher Collins are of normal intelligence. TCS is characterized by a bilateral symmetric hypoplasia of the mandible, zygomatic arches, and maxillae (Fig. 22).

Uma paciente recém-nascida apresenta surdez por malformação congênita do MARTELO (ouvido médio) e estruturas craniofaciais .

Visto que o MARTELO é formado pelo primeiro arco branquial, as estruturas craniofaciais mais provável de serem afetadas podem incluir:

a) septo nasal
b) palato
c) maxila
d) inervação da língua no corpo

ARCO	Ouvido/Orelha	Nariz	Palato	Língua	NERVO	Músculos
Eminência Frontal (0)		Placódios Nasais	Cristas Palatinas			
1	Martelo Bigorna Pavilhão	Lábio Inferior, Mandíbula		Corpo	V	De Mastigação
2	Estribo Pavilhão			Corpo	VII	Da expressão Facial
3				Base	IX	Estilo Faríngeo
4				Epiglote	V	Constritores da Laringe

Uma paciente recém-nascida apresenta surdez por malformação congênita do MARTELO (ouvido interno) e estruturas craniofaciais .

Visto que o MARTELO é formado pelo primeiro arco branquial, as estruturas craniofaciais mais provável de serem afetadas podem incluir:

a) septo nasal
b) palato
c) maxila
d) inervação da língua no corpo