

FETAL SKULL

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The purpose of these lectures is to deliver the basic obstetrical, and gynecological knowledge to the undergraduate medical student, without sophistications or unnecessary details.



ان الغرض من وراء هذه المحاضرات هو تقديم المعلومات الأساسية في علم التوليد و أمراض النساء دون تفاصيل لا تفيد طالب البكالوريوس. والله من وراء القصد.

FETAL SKULL

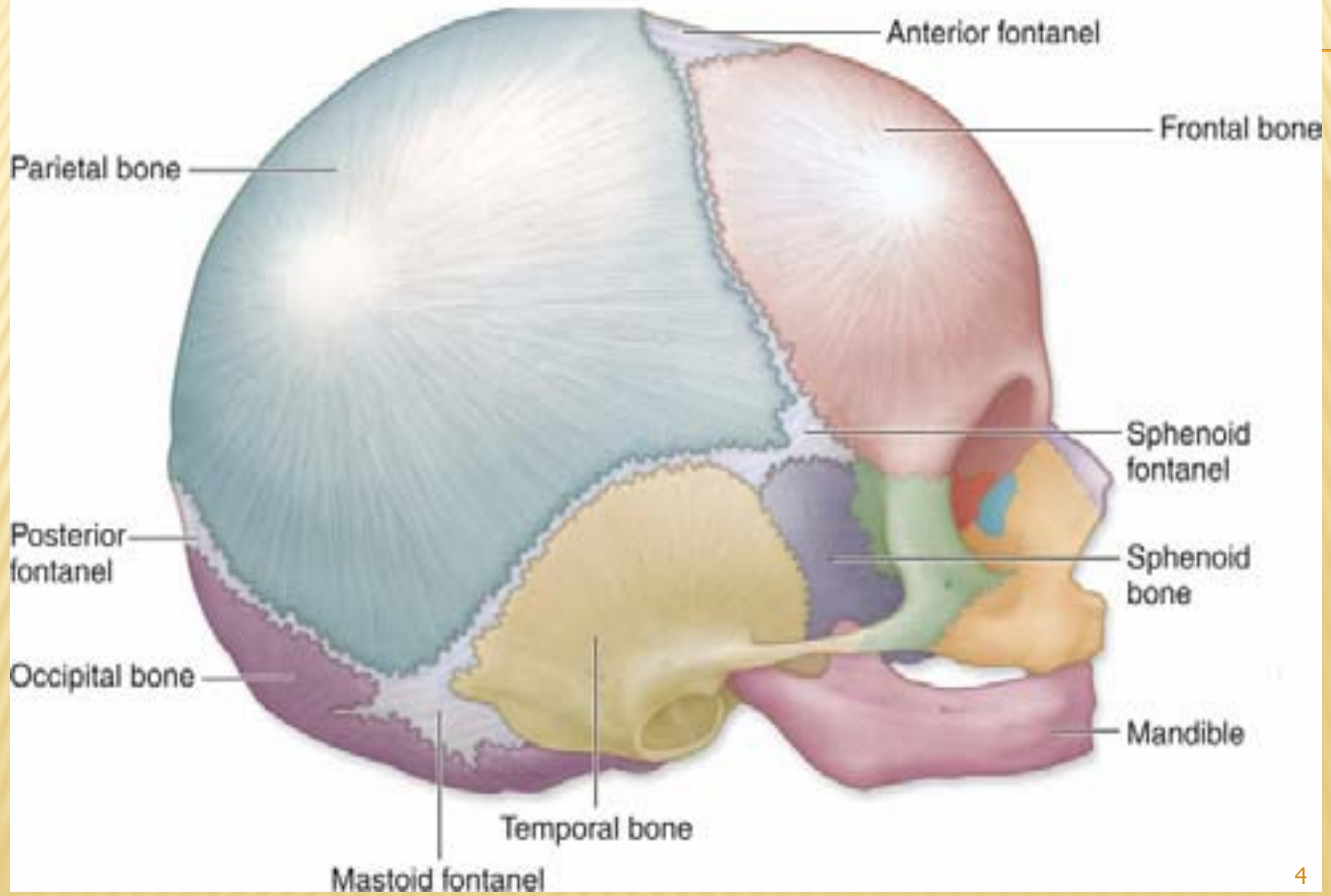
The skull is formed of the face , the vault & the base

The bones that form the skull are : two frontal bones, two parietal bones, two temporal bones wings of the sphenoid & occipital bone

The bones of the face & base are heavy & fused

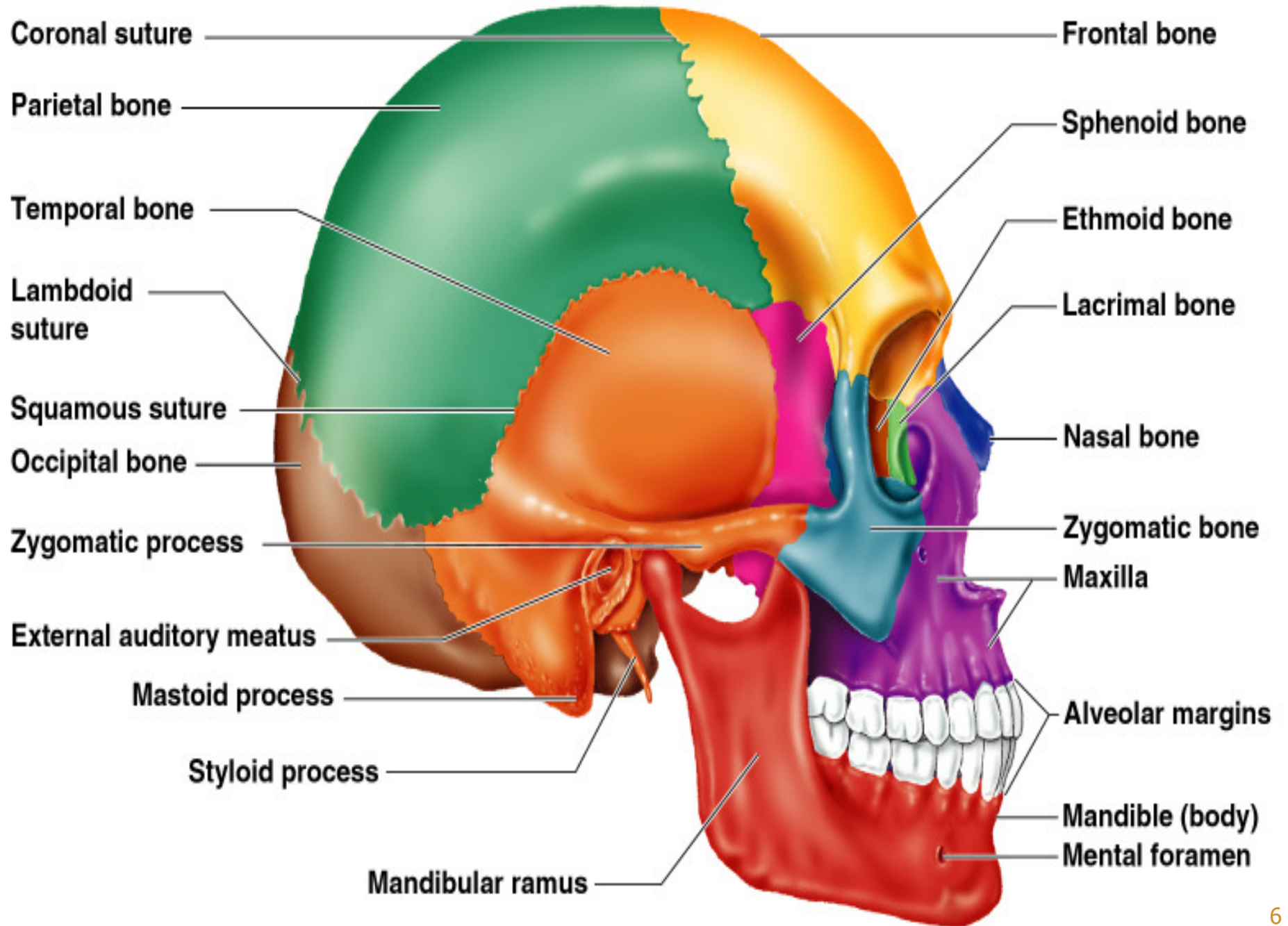
The bones of the vault are 2 frontal, 2 parietal & occipital

The bones of the vault are not joined thus changes in the shape of the fetal head during labor can occur due to **molding**



BONES & SUTURES





FETAL SKULL DEFINITIONS

Bregma ➔ Ant fontanelle

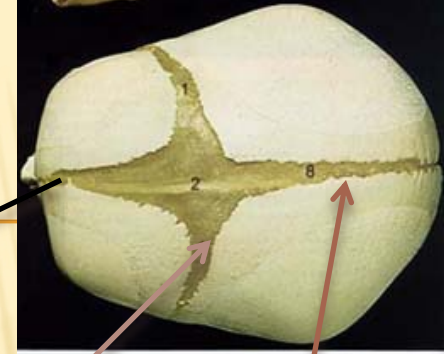
Brow ➔ lies between bregma & root of the nose

Face ➔ lies between root of the nose & suborbital ridges

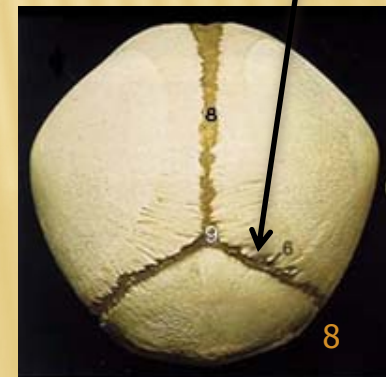
Occiput ➔ boney prominence behind post fontanelle

Vertex ➔ diamond shaped area between ant & post fontanelles & parietal eminences

FETAL SKULL SUTURES

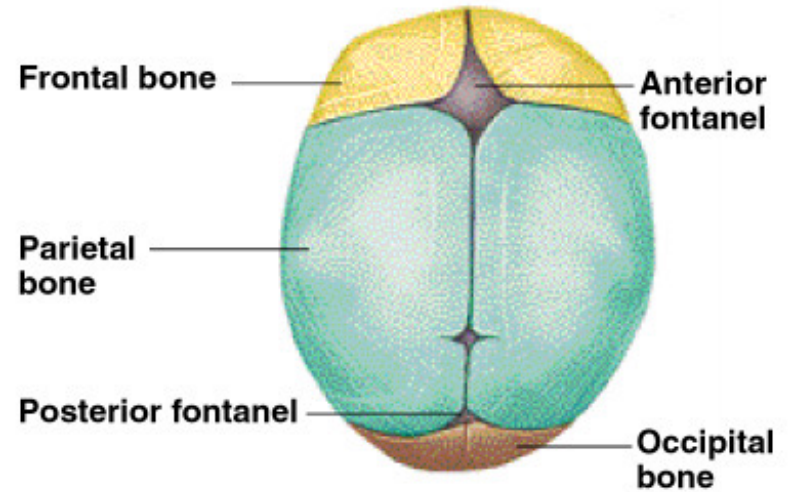


- ▶ **Frontal suture** ➔ between 2 frontal bones
- ▶ **Sagittal suture** ➔ between 2 parietal bones
- ▶ **Coronal suture** ➔ between parietal & frontal
- ▶ **Lambdoid suture** ➔ between parietal & occipital
- ▶ **Temporal suture** ➔ between inferior margin of the parietal & temporal

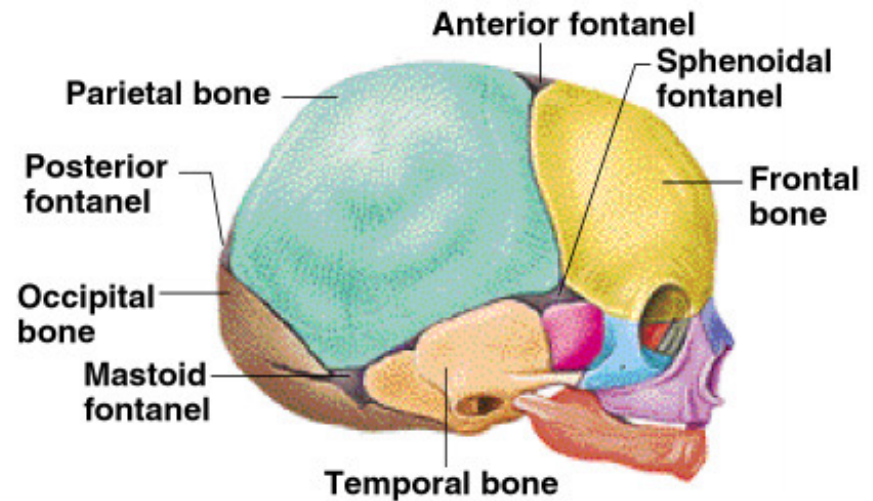


The Fetal Skull

- Fontanelles – fibrous membranes connecting the cranial bones
 - Allow the brain to grow
 - Convert to bone within 24 months after birth



(a)



(b)

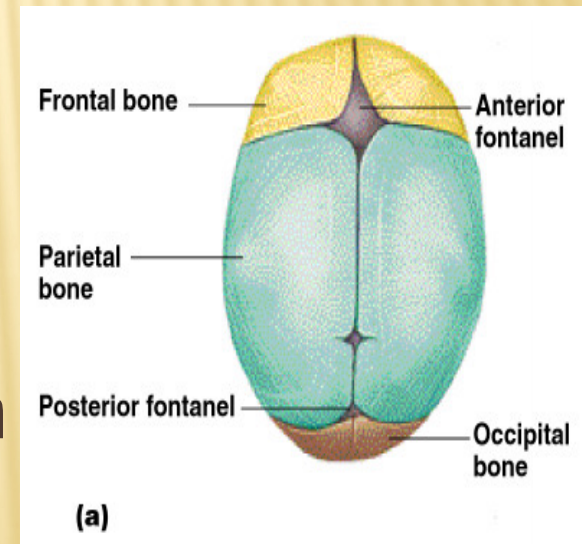
FETAL SKULL FONTANELLES

✘ Anterior fontanelle ➡

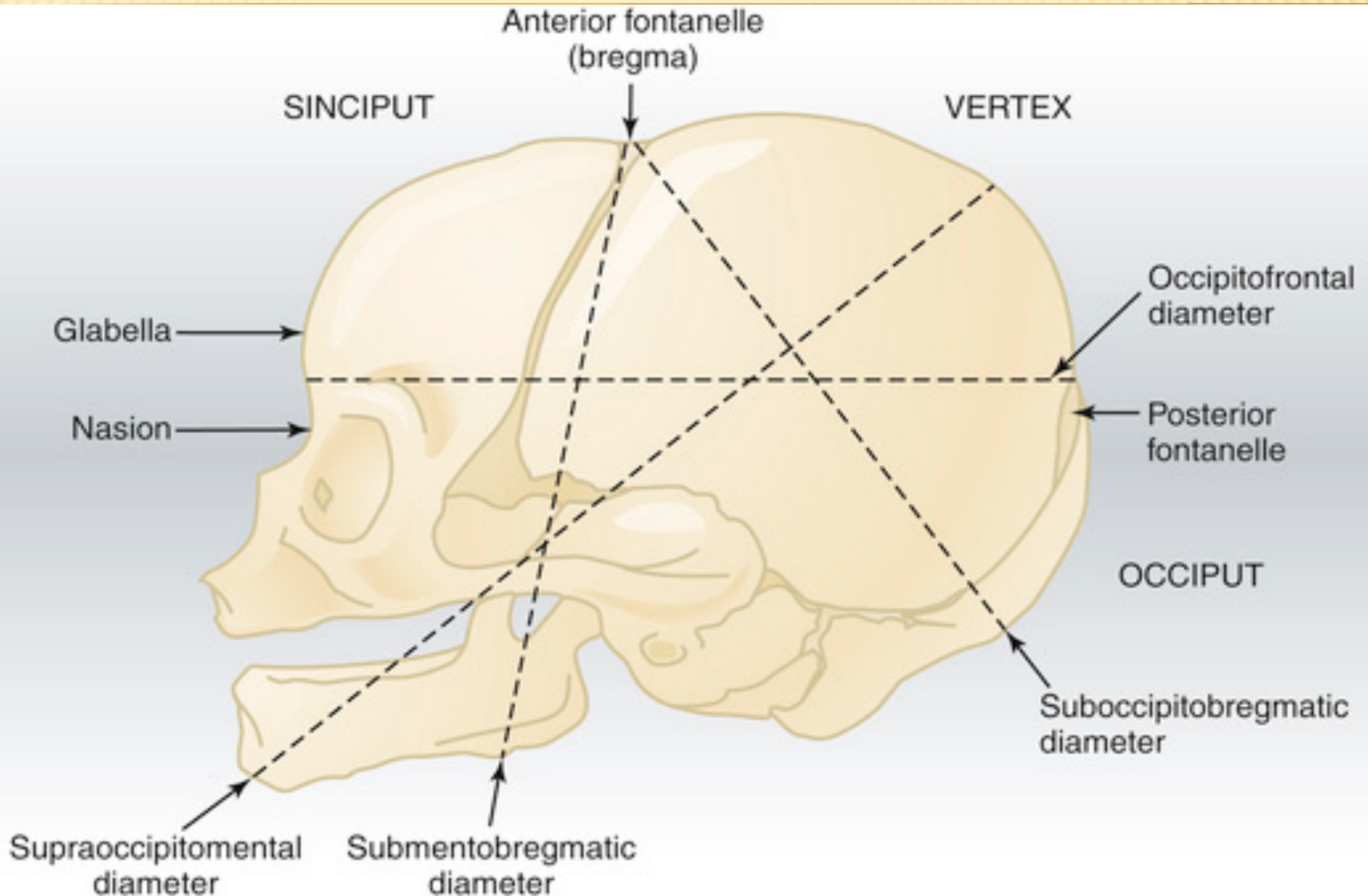
Diamond shaped space between coronal & sagittal suture 3 X 3 cm , ossifies at 18 m

✘ Post font (lambda) ➡

Triangle shaped space between sagittal & lambdoid suture



LONGITUDINAL DIAMETERS OF THE FETAL HEAD



		Length (cm)	Extent		Importance
			From	To	
Longitudinal diameters	Suboccipito-bregmatic (SOB)	9.5	Below occipital protuberance	Center of bregma	● Engaging diameter in fully flexed head.
	Suboccipito-frontal (SOF)	10	Below occipital protuberance	Anterior end of bregma	● Engaging diameter in incompletely flexed head & in aftercoming head in breech. ● Diameter distending vulva in OA position if head is allowed to extend after crowning
	Occipito-frontal (OF)	11.5	Occipital protuberance	Root of nose	● Engaging diameter in deflexed head & may be in aftercoming head in breech. ● Diameter distending vulva in face to pubis & in OA position if head is allowed to extend before crowning (premature extension).
	Submento-bregmatic (SMB)	9.5	Junction () chin & neck	Center of bregma	● Engaging diameter in face presentation è fully extended head.
	Submento-vertical (SMV)	11.5	Junction () chin & neck	Vertical point	● Engaging diameter in face presentation è incompletely extended head. ● Diameter distending vulva in face MA.
	Mento-vertical (MV)	13.5	Tip of chin	Vertical point	● Engaging diameter in brow presentation.
Transverse diameters	Biparietal diameter (BPD)	9.5	() 2 parietal eminences		● Largest transverse diameter of fetal head & head is said to be engaged if this diameter passes plane of pelvic inlet.
	Subparietal-supraparietal	9	Above parietal eminence on one side	Below parietal eminence on other side	● Engaging transverse diameter in asynclitism.
	Bitemporal	8	() outer ends of temporal sutures		
	Bimastoid	7.5	() tips of 2 mastoid bones		● Can't be crushed during craniotomy.

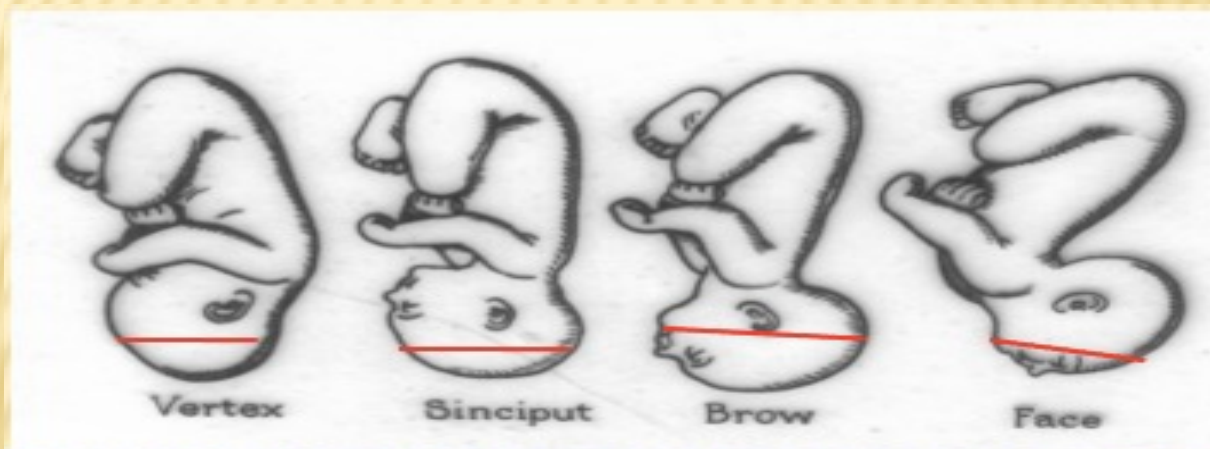
N.B.: Vertical point: Point on sagittal suture midway () anterior & posterior fontanelles.

Different diameters of engagement in different cephalic presentation

<i>Diameter Of Engagement</i>	<i>Diameter</i>	<i>Presentation</i>	<i>Attitude</i>
1. Suboccipito bregmatic (nape of neck to center of bregma)	9.4 cm	Vertex	Fully flexed
2. Suboccipito frontal (nape of neck to anterior end of bregma)	10 cm	Deflexed vertex	Incomplete flexion of head
3. Occipito frontal (occipital protuberance to root of nose)	11.3 cm	Extended vertex	Extended
4. Mento vertical (point of chin to one inch in front of posterior fontanelle in the sagittal suture)	13.8 cm	Brow	Incomplete extension
5. Submento vertical (Angle between neck and chin to center of sagittal suture)	11.3 cm	Incomplete extended face	Partially extended face
6. Submento bregmatic (angle between neck and chin to center of bregma)	9.4 cm	Complete extended face	Fully extended face

FETAL HEAD ATTITUDE & PRESENTATION

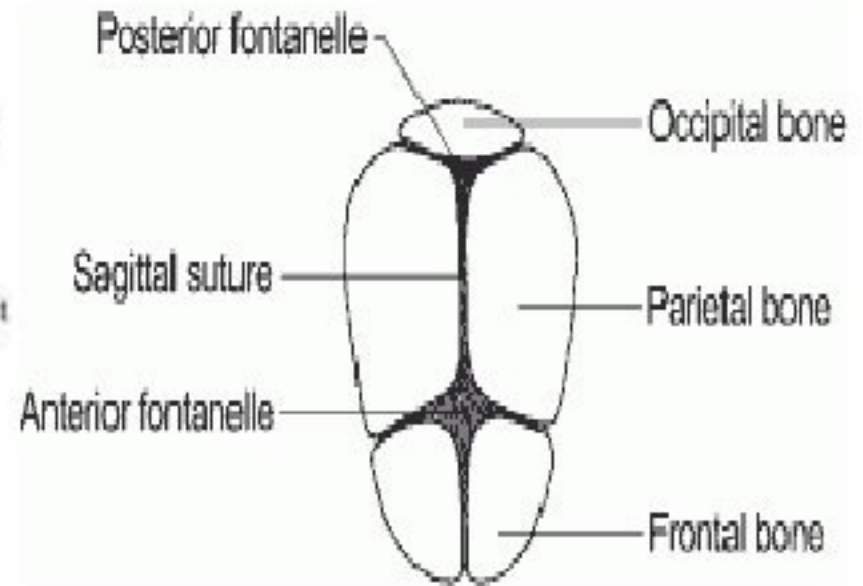
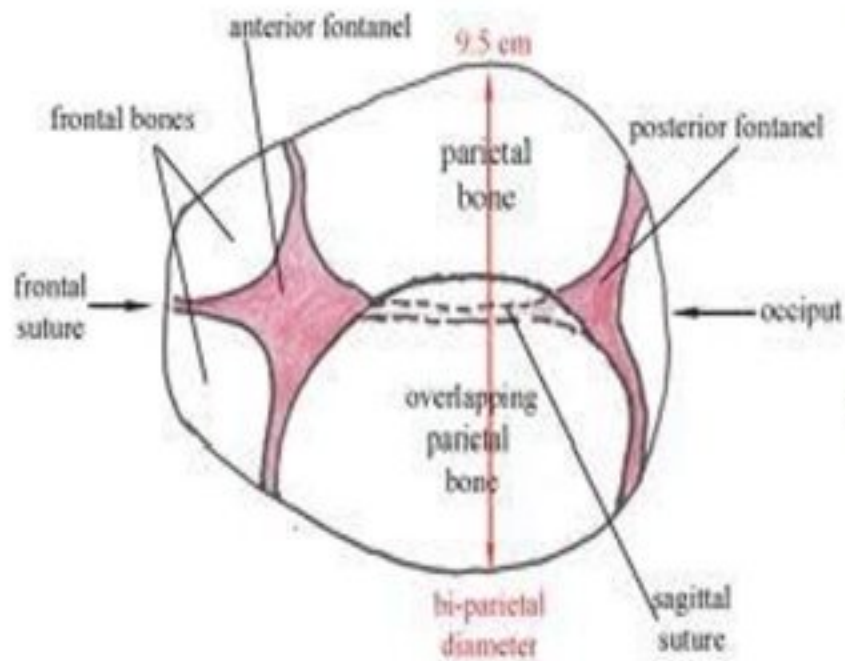
Attitude	Presentation	Dominator*
1. Flexion	Vertex	Occiput
1. Deflexion	Brow	Forehead (frontum)
1. Extention	Face	Chin (mentum)
1. Side-tilt	Asynclitism	Parietal bone



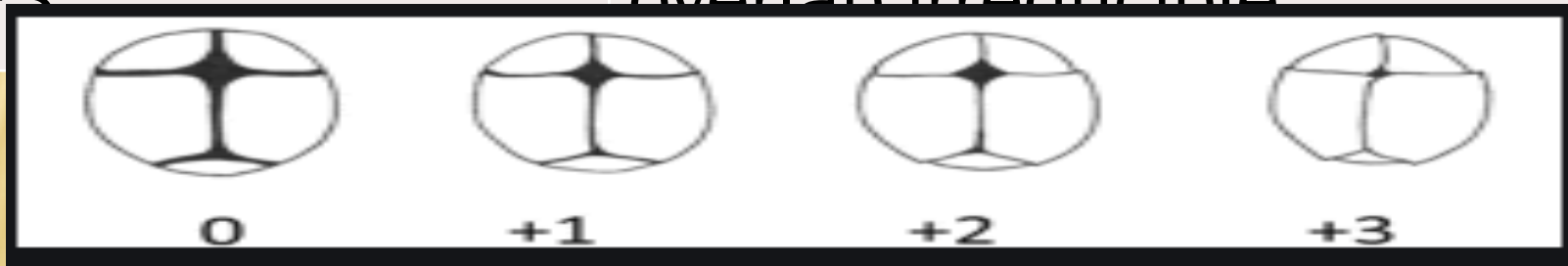
MOULDING OF THE HEAD

- ▶ Occurs with descent of the fetal head into the pelvis to reduce the head circumference
- ▶ Frontal bones **slip under** parietal bones
- ▶ Parietal bones **override** each other
- ▶ Parietal bones **slip under** the occipital bone

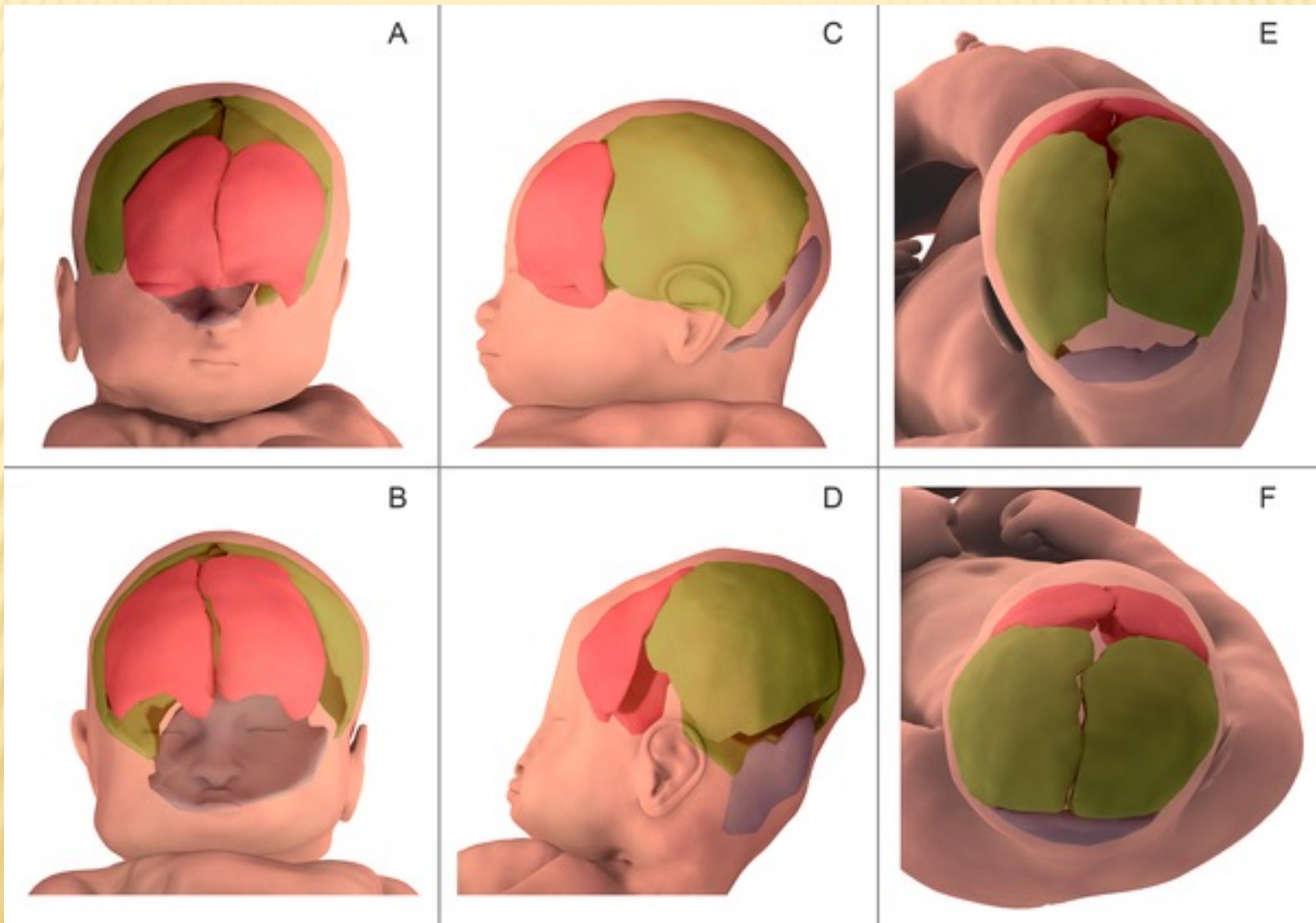
Moulding the fetal skull bones



DEGREE OF HEAD MOULDING	DESCRIPTION
0	suture lines are separate
+1	➔ suture lines meet
+2	suture lines overlap but can be reduced by gentle digital pressure
+3	overlap irreducible



MOULDING



tusind tak
謝謝 dakujem vám
ngiyabonga
dziekuję
merci
suksema
danke
thank
baie dankie
धन्यवाद molte grazie
gracias
takk
you
obrigada
obrigado
dank u
teşekkür ederim
شكرا
gràcies
tänan
tack så mycket
teşekkür edire
mahalo