

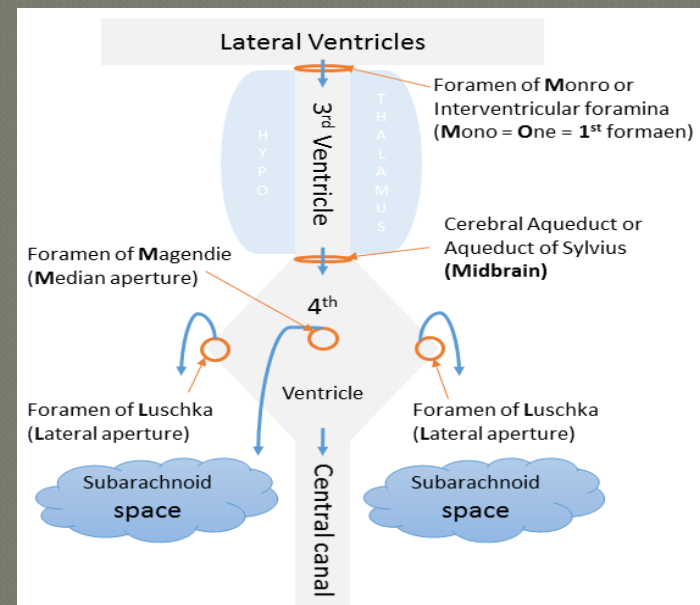
BODY FLUIDS

DEPARTMENT OF
BIOCHEMISTRY
KIMS &RC

CEREBRO-SPINAL FLUID

(Secreted by the choroid plexus in the brain)

Parameter	Reference interval	Significance
Glucose	40-70 mg/ dL	Normal in viral meningitis Decreased in Bacterial meningitis
Sodium	138-145 mEq/L	
Potassium	2.8 -3.2 mEq/L	
Bicarbonte	22-26 mEq/L	



BREAST MILK

(Colostrum is a breast milk produced immediately after birth of the new born & lasts for 2-4 days)

Parameter	Factors	
Immune factors	Ig G, M, A, D Lactoferrin Cytokines & lymphokines Lysozyme Oligosaccharides & glycoconjugates Lactalbumin Leucocytes	Provided innate immunity
Growth factors	Epithelial growth factor Transforming growth factor Platelet Derived growth factor Vitamins & Minerals	Helps in growth & development



SEMEN

(Produced from seminiferous glands)

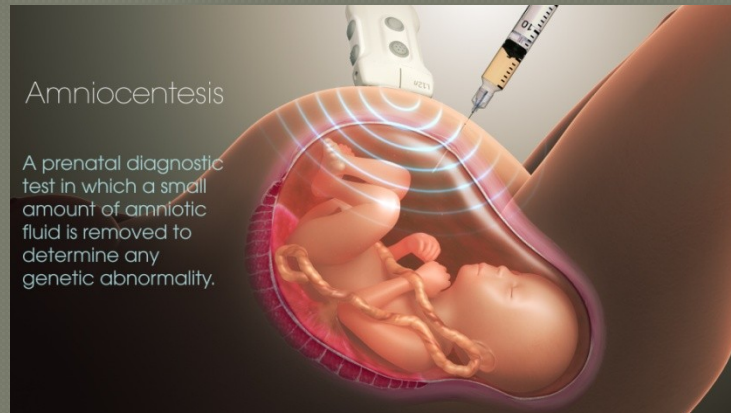
Parameter	Lower reference limits based on WHO criteria 2010	Applied importance
Volume	1.4 - 1.7 mL	Reduced in hypospermia Increased in hyperspermia
Sperm concentration	12 - 16 Million / mL	Reduced in oligo-spermia
Sperm morphology	3 - 4% of normal forms	Decreased in teratozoospermia
Progressive motility	31 - 34%	Decreased in Asthenozoospermia
Vitality	58% live	Necrozoospermia (Dead sperms)



AMNIOTIC FLUID

(Secreted from the mothers placenta & fetal urine)

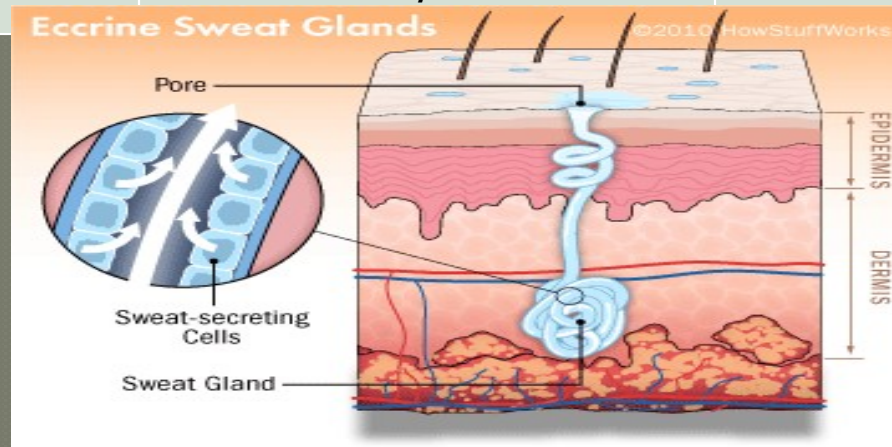
Volume of amniotic fluid increases with the growth of fetus	1L (at birth)	Reduced in oligohydramnios Increased in polyhydramnios
pH	7.0 – 7.5	Vaginal pH >4.5 is suggestive of rupture of amniotic membrane
L/S ratio test (lecithin/sphingomyelin ratio)	L/S of 2:1 or greater at 33 weeks	Indicates that the fetus can be safely delivered, with functioning lungs
Amniotic stem cells		Source of pluripotent cells



SWEAT

(Produced from the eccrine sweat glands)

Parameters		
Sodium	0.5-0.9 g/L depending on the sweat rate	Increased in cystic fibrosis
Potassium	0.2 g/L	
Chloride	0.4 – 0.8g/L	Increased in cystic fibrosis
Urea	15 – 25 mg/dL	
Lactate	4-40 mmol/L	



THANK YOU