

thick wall cylinder

$$P = TW(\text{wall thickn})/R$$

Nernst equation

$$E_{Na} = 61.5 \log [Na(o)/Na(i)]$$

Goldmann-Hodgkin-Katz equation

$$RMP(mV) = 61.5 \log \left[\frac{(\text{conc } +ve \text{ ion out} \times \text{perm } +ve \text{ ion}) + (\text{conc } -ve \text{ ion in} \times \text{perm } -ve \text{ ion})}{(\text{conc } +ve \text{ ion in} \times \text{perm } +ve \text{ ion}) + (\text{conc } -ve \text{ ion} \times \text{perm of } -ve \text{ ion})} \right]$$

$$(100 - HCT)/100 = \text{pl vol/bld vol}$$

$$(100 - HCT)/100 = \text{ren pl flow/ren bldflow}$$

$$GFR = K_f \times 10$$

$$\text{Filtration Fraction} = GFR/RPF$$

$$\text{clearance}(C) = \text{conc in urine}(U) \times \text{rate of urine flow}(V) \div \text{conc in plasma}(P)$$

$$\text{fractional excretion Na}(FeNa) = [U(Na)/P(Na)] \div [U(\text{creat})/P(\text{creat})] \times 100$$

$$\text{free H}_2\text{O clearance}(CH_2O) = V - (U_{osm}/P_{osm}) \times V$$

$$\text{total(pulm) ventil} = RR \times TV$$

$$\text{alveol vent} = RR \times (TV - DS)$$

alveolar gas equation

$$pAO_2(\text{partial press } O_2 \text{ alveol}) = [p_{atm}(\text{atm press}) - p_{H_2O}(\text{part press } H_2O \text{ in resp tract})] \times \text{fract conc } O_2 \text{ in air} - [p_{ACO_2}(\text{part press } CO_2 \text{ in alveol})/R(\text{resp quot})]$$

$$IC = TV + IRV$$

$$EC = TV + ERV$$

$$FRC(\text{relaxat } V) = ERV + RV$$

$$VC = IRV + TV + ERV$$

$$TLC = IRV + TV + ERV + RV$$

$$\text{breathing reserve} = MVV(\text{max volunt ventil}) - RMV(\text{resp min vol})$$

$$\text{compliance} = \Delta \text{vol} / \Delta \text{press}$$

$$\text{elastance} = 1 / \text{compliance}$$

sp compliance=compliance/FRC

O₂ content(g)=Hb(g/dl)×1.34×sO₂

RQ=vol of CO₂ produ/vol of O₂ consum

solubility coeff=conc of dissolv gas/partial press

Weber Fechner law

sensation felt=Klog[stimulus intensity]+ constant

Stevens power law

sensation=K[Intensity]^a

Mareys law

HR=K×1/BP

Bainbridge reflex

bld vol=K×HR

PP=SBP–DBP=SV/compliance

MAP=DBP+ $\frac{1}{3}$ PP

ejection fraction=SV/EDV

cardiac reserv(CR)=active CO–basal CO

CO=HR×SV=(MAP–RAP)/TPR

dye dilution technique

CO(l/min)=amount of dye inj(mg)÷ [bld conc of dye(mg/l)× cirulat time(s)]

Fick method

CO=O₂ consumpt(ml/min)/AV O₂ diff

Stewart Hamilton principle

CO=[I(initial vol of dye inj)× 60]/[C(mean conc dye)× t(time in s at which dye app 1st in a)]

cardiac index

CI=CO/body SA

factor IX=20h
hCG=24h
T3=1d
protS=30h
hPL=34-36h
digoxin=36h
factor II=60h
PSA=2.5d
T4=7d
albumin=21d
IgG=23d

Abbreviations

a-artery, AA-amino acid, abtc-antibiotic, AI-autoimmune
bef-before, bel-below, b/l-bilateral, bld-blood, b/n-between, bn-benign, br-branch, Bx-biopsy
ca-carcinoma, carb-carbohydrate, c/i-contraindication, c/l-contralateral, conc-concentration, cong-congenital, Cx-cervix
d-day, def-deficient, ds-disease, d/t-due to, Dx-diagnosis
E-estrogen
fem-female, fr-from
gld-gland, glu-glucose
h-hormone
idiop-idiopathic, i/l-ipsilateral, inf-infection, inj-injury
lig-ligament, LL-lower limb, l/t-leading to
m-muscle, maj-major, mal-male, MC-most common, met-metastasis, min-minor, mtx-methotrexate, Mx-management
n-nerve, norm-normal
P-progesterone, pl-plasma, prot-protein, pt-patient
Rx-treatment
SCC-squamous cell carcinoma, sr-serum, Sx-surgery, sz-seizure
tm-tumour, ts-tissue
UL-upper limb, u/l-unilateral
vag-vagina, VC-vocal cord, vel-velocity, vert-vertebra, vit-vitamin, vol-volume
w-week, wt-weight
Xr-X ray
y-year
#-fracture
°-degree

THESE NOTES ARE ONLY FOR THE PURPOSE OF GUIDANCE AND HELP TO PG ASPIRANTS, NOT FOR COMMERCIAL OR OTHER PURPOSE. REFERENCE HAS BEEN TAKEN FROM VARIOUS STANDARD TEXTBOOKS.