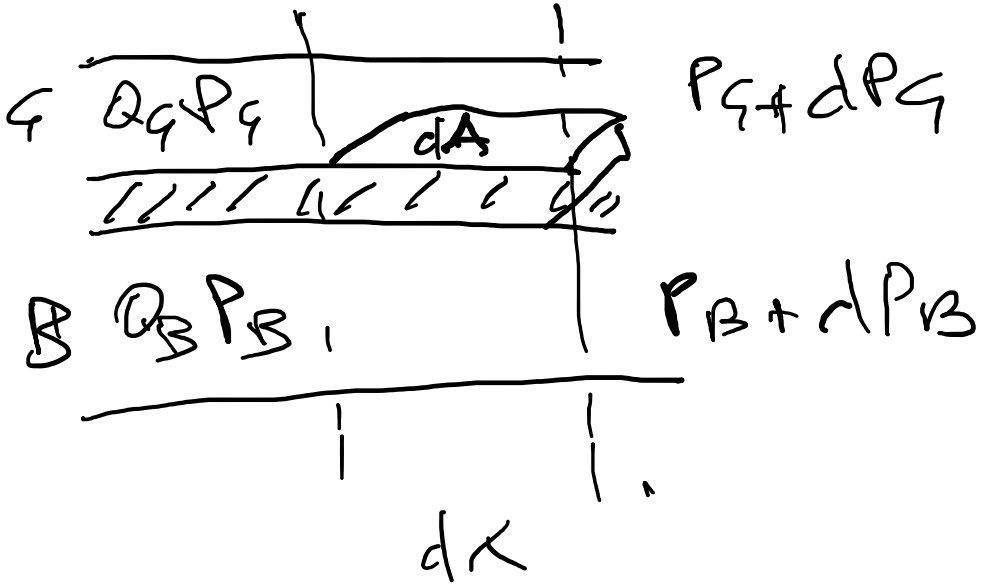


$$dW = K(P_G - P_B)\,dA = -Q_G H\,dP_G = Q_B H\,dP_B$$

(1) (2) (3)

$H =$ Henry constante del gas

1 – 2

1 – 3

(4) $$\frac{dP_G}{P_G - P_B} = -\frac{K\,dA}{Q_G H} \qquad \frac{dP_B}{P_G - P_B} = \frac{K\,dA}{Q_B H}$$ (5)

$$\frac{dP_G}{P_G - P_B} - \frac{dP_B}{P_G - P_B} = -\frac{K\,dA}{H}\left[\frac{1}{Q_G} + \frac{1}{Q_B}\right]$$

$$\int \frac{d(P_G - P_B)}{P_G - P_B} = \int -\frac{K\,dA}{H}\left[\frac{1}{Q_G} + \frac{1}{Q_B}\right] \qquad \ln\frac{(P_{G_0} - P_{B_0})}{(P_{G_i} - P_{B_i})} = -\frac{KA}{H}\left[\frac{1}{Q_G} + \frac{1}{Q_B}\right]$$

$$\ln \frac{P_{G0} - P_{B0}}{P_{Gi} - P_{Bi}} = -\frac{KA}{H}\left[\frac{1}{Q_B} + \frac{1}{Q_G}\right] \qquad \ln \frac{P_{Gi} - P_{Bi}}{P_{G0} - P_{B0}} = \frac{KA}{H}\left[\frac{1}{Q_B} + \frac{1}{Q_G}\right]$$

$$dW = -Q_G H P_G \qquad W = -Q_G H \left[P_{G0} - P_{Gi}\right] = Q_G H \left[P_{Gi} - P_{G0}\right]$$

$$dW = Q_B H P_B \qquad W = Q_B H \left[P_{B0} - P_{Bi}\right]$$

$$\frac{1}{Q_G} = \frac{H\left[P_{Gi} - P_{G0}\right]}{W} \qquad \frac{1}{Q_B} = \frac{H\left(P_{B0} - P_{Bi}\right)}{W}$$

$$\ln \frac{P_{Gi} - P_{Bi}}{P_{G0} - P_{B0}} = \frac{KA}{H} \cdot \left[\frac{H\left(P_{B0} - P_{Bi}\right)}{W} + \frac{H\left(P_{Gi} - P_{G0}\right)}{W}\right]$$

$$\ln \frac{P_{Gi} - P_{Bi}}{P_{Go} - P_{Bo}} = \frac{KA}{W} \left[P_{Bo} - P_{Bi} + P_{Gi} - P_{Go} \right] = \frac{KA}{W} \left[(P_{Gi} - P_{Bi}) + (P_{Bo} - P_{Go}) \right]$$

$$W = KA \frac{(P_{Gi} - P_{Bi}) - (P_{Go} - P_{Bo})}{\ln \frac{P_{Gi} - P_{Bi}}{P_{Go} - P_{Bo}}}$$

= eq. log. media diferencial

$W_{O_2} = 250 \frac{ml}{min}$

$W_{CO_2} = 200 \frac{ml}{min}$

$P_{GiO_2} = 760 - 47 \text{ mmHg}$

$P_{BiO_2} = 40 \text{ mmHg}$

$P_{BoO_2} = 104 \text{ mmHg}$

$P_{GoO_2} = 713 - 64 \text{ mmHg}$

C_{O2}

$P_{GiCO2} = \emptyset$

$P_{G0CO2} = 5\text{-}6$ mmHg

$P_{BiCO2} = 45\text{-}46$ mmHg

$P_{B0}CO2 = 40$ mmHg

Sistema OSS a curve apparte

$A = mean(A_{O2}, A_{CO2})$

Sistema rimozione del CO

$A = max(A_{O2}, A_{CO2})$

$O = Q_B \frac{P_{Bi} - P_{B0}}{P_{Bi} - P_{Gi}} =$ Oxygenation.

$D = Q_B \frac{C_{Bi} - C_{B0}}{C_{Bi} - C_{Di}}$

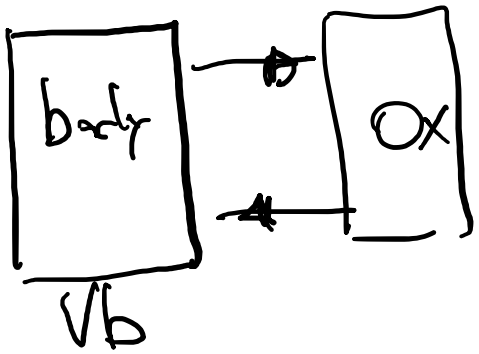
$E = \frac{D}{Q_B}\Big|_{C_{Di}=0}$

$C = O|_{P_{Gi}=0} = Q_B \frac{P_{Bi} - P_{B0}}{P_{Bi}}$

$E = \frac{O}{Q_B}\Big|_{P_{Gi}=0} = \frac{P_{Bi} - P_{B0}}{P_{Bi}}$

$$E = 1 - e^{-N_T} \qquad N_T = \frac{KA}{Q_B}$$

$$E = \frac{P_{Bi} - P_{Bo}}{P_{Bi}} = 1 - \frac{P_{Bo}}{P_{Bi}}$$



$$1 - \frac{P_{Bo}}{P_{Bi}} = 1 - e^{-N_T} \Rightarrow \frac{P_{Bo}}{P_{Bi}} = e^{-N_T}.$$

$$P_{Bo} = P_{Bi} e^{-\frac{KA}{Q_B}}$$

whole body

$$V_b H \frac{dP_{Bi}}{dt} = Q_B H (P_{Bo} - P_{Bi}) = Q_B H (P_{Bi} e^{-N_T} - P_{Bi}) =$$

$$= Q_B H P_{Bi} (e^{-N_T} - 1) \qquad e^{-N_T} = B$$

$$V_b H \frac{dP_{Bi}}{dt} = Q_B H P_{Bi} (B-1)$$

H = Henry

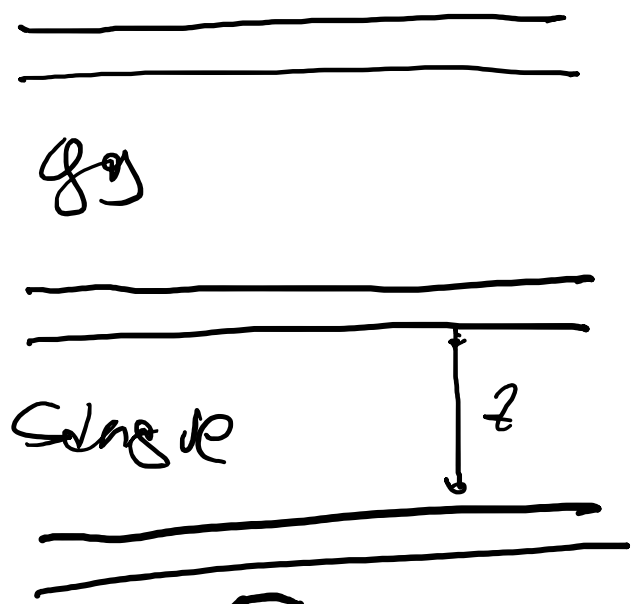
$$\frac{dP_{Bi}}{P_{Bi}} = \frac{Q_B H (B-1)}{V_b H} dt$$

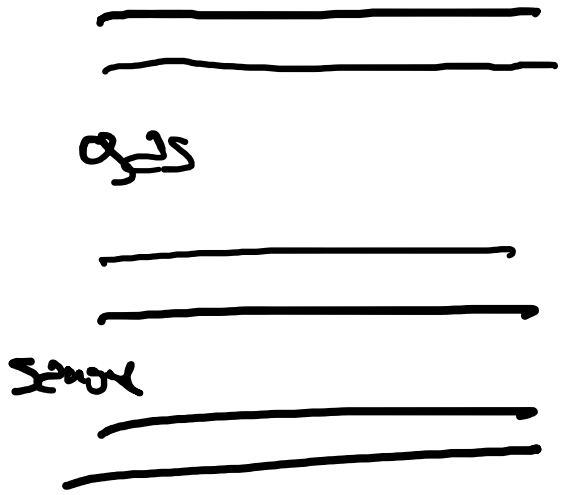
$t = t_f - t_i$

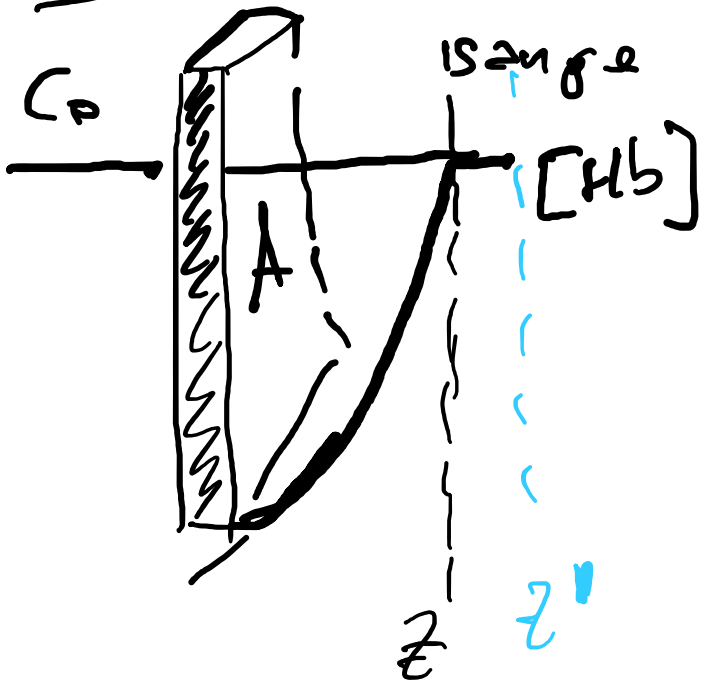
$$\ln \frac{P_{Bi\,f}}{P_{Bi\,i}} = \frac{Q_B (B-1)}{V_b} \cdot t$$

$$P_{Bi\,f} = P_{Bi\,i}\, e^{\frac{Q_B (B-1)}{V_b} \cdot t}$$

whole body temporale







$$-DA\frac{dc}{dz} = -DA\frac{C_0}{z}$$

$$[Hb]\cancel{A}dz = -DA\frac{C_0}{z}dt$$

$$[Hb]\, dz = D \frac{C_B}{z}\, dt$$

$$z\, dz = \frac{D\, C_B}{[HB]}\, dt$$

$$\frac{z^2}{2} = \frac{D\, C_B}{[HB]}\, t \qquad z^2 = \frac{2 D\, C_B\, t}{[HB]} \qquad z = \sqrt{\frac{2 D\, C_B\, t}{[HB]}}$$