040 Human Performance

Eyes	70-80%
Ears	10-15%
Nose	2-4%
Skin	2%
Tongue	1-2%

BMI = Mass / height²

Oxygen: critical at 22000’

Hypoxia

- **hypoxic** – insufficient oxygen in the air/partial pressure to low
- **hypaemic/anaemic** – reduced oxygen carrying capability of the blood
- **stagnant** – inadequate circulation (e.g. high g)
- **histoxic** – interference with the use of oxygen by body tissues (e.g. alcohol, drugs)

8000 ft = ¾ of sea level pressure

18000 ft = ½ of sea level pressure

36000 ft = ¼ of sea level pressure

bottom up vs top down processing

alcohol: 8hrs/0.02%

TUC:

20000 ft	30 min (5 min when active)
25000 ft	2-3 min
30000 ft	1-2 min
35000 ft	30-90 sec
40000 ft	15-20 sec

sea level – 10000 ft	breathe normally
10000 – 34000 ft	mixture of 100% oxygen & air
34000 – 40000 ft	100% oxygen
>40000ft	pressurized oxygen

Stress: alarm (adrenaline) – resistance (cortisol, convert fat) – exhaustion

maslow’s hierarchy:

1. self-actualization
2. needs for esteem
3. needs of love
4. safety needs
5. physiological needs

DETECT

ESTIMATE

CHOOSE

IDENTIFY

DO

EVALUATE

TEM Threat Error Model

CNS – largest part

PNS - sensory

ANS – unconscious functions

brain stem – lower part of brain

cerebrum – forebrain, memory, senses, consciousness

cerebellum – reflex centre, movement coordination

photopic vision – well-lit conditions

scotopic vision – low light conditions

Rasmussen: skill – rule – knowledge

behavior types: aggressive – assertive – non-assertive

hazardous attitudes

- anti-authority
- impulsivity
- invulnerability
- macho
- resignation

Hepatitis A	Food or water	Gamma-Globulin
Dengue fever	Mosquitoes by day	Vaccine
Tetanus	Bacteria via skin puncture	Vaccine
Cholera	Food or water	