

بنام آنکه دانش مطلق
از آن اوست

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Medical Terminology :

medicine = medi +cal

term / termin – o – logy : terminology



Parts of a Word

a . Root Word

b . Combining form of a root word

c . Prefix

d . Suffix



Medical terminology

Root Word : The main part of a word

Example : Head , cyst

Compound Word : made up two or more
word

Example : newborn , eyeball

Combining form :made up by adding a
vowel to the root word (o ,a , e , I , u)

Example : orth-o-pedic , osteo-o-tomy , hemi-opia ,
ad-renal



Medical terminology

Prefix : placed at the beginning or front of another word or word part and may be a syllable , a group of syllable or a word .

Example : peri +ocular



Medical terminology

Suffix : a word part that is added at the end of a word or word part .

Example : lith +tripsy =lithotripsy

Prefix related to position regarding time and place

Ana : up , back again ; anabolism = building up

Ante : before ; antepartum = before delivery

Cata : down , through ; catabolism = breaking down

Gen : beginning , origin ; genesis = origin

Silent Letters and unusual pronunciations

letter(s)	pronunciation	example
ch	K	chemical
dys	dis	dystrophy
eu	u	euphoria
gn	n	gnathic
ph	f	pharmacy
pn	n	pneumonia
ps	s	pseudo
pt	t	ptosis
rh	r	rheumatic
x	z	xiphoid

Prefix and suffix

prefix / suffix	meaning	example
ambi-	both	ambidextrous
ampho-		amphogenic
amphi-	on both sides/ double	amphisexual
ana	up/toward/apart	anatomy anacatharsis
ap/apo	separation from/ derived from/	apobiosis apocleisis
cata	down/under / lower/against	catabolism catalepsy
e/ec/exo	out of/from/ away from	enucleate exostosis

Prefix and suffix

em/en	in	empyema
		encranial
ent/ento	within,inner	entiris/entoccele
im/in	in,into,within	implant/injection
im/in	not	immature
		involuntary
meta	change,beyound	metachrosis
		metabasis
per	through, excessive	permeable / peracute
-dynia	pain	mastodynia
-ate,	use , subject to	impregnate / visualize
- ize		
-cle,-cule	small	follicle / molecule / arteiole /nodule
-ole,-ola		ovulum / homunculus
- ule, -ulum		

Prefix and suffix

-emesis	vomit	hematemesis
-ent,-er	person /	recipient /
-ist,-or	agent	examiner /oculist donor
-esis,-ia,	state /	paresis / acidity
-iasis,ity	condition	narcosis / therapy
-tion,-y		
-ible,-ile	capable/able	flexible

Prefix and suffix

-ites	inflammation	tympanites
-penia	deficiency of/ lack of	glycopenia/ leukopenia
- ptosis	prolaps/downward / placement	proctoptosis
-rrhexis	rupture	metorrhexis

Assessment of air way

control of the airway is fundamental for safe anaesthetic practice and careful assessment must be undertaken preoperatively. this is carried out logically ;

- history , symptoms
- examination :-anatomy and variants
 - medical conditions
 - specific assessment :
 - mallampati scoring system
 - wilson risk factor scoring system
 - thyromental distance
 - sternomental distance
- other tests

Wilson risk factor

Risk factor	score	criteria
weight	0	<90 kg
	1	90 – 110 kg
	2	>110 kg
head and neck movement	0	>90°
	1	about 90°
	2	<90°

Wilson risk factor

- jaw movement
- 0 incisor gap $>5\text{cm}$ or
subluxion >0
 - 1 incisor gap $<5\text{cm}$ and
subluxation = 0
 - 2 incisor gap $<5\text{cm}$ and
subluxation <0

Wilson risk factor

receding mandible	0	normal
	1	moderate
	2	severe
buck teeth	0	normal
	1	moderate
	2	severe

translate

The airway must be assessed before any anaesthetic procedure is embarked upon. Airway control and endotracheal intubation

is occasionally difficult, or even impossible, in anatomically normal people. An assessment from the patient's history, symptoms and medical conditions, combined with careful clinical examination, will help avoid most, but not all, unexpectedly difficult intubation.

glossary

- abdomen(AB-do-men)
- abdominal (ab-DOM-i-nal)
abdominal cavity (ab-DOM-i-nal KAV-i-te)
- acquired immunodeficiency syndrome(ah-KWI-erd im-u-no deh-FISH-en-se SIN-drom)
- abnormal (ab-NOR-mal)
- Acromegaly (ak-ro-MEG-ah-le)

glossary

- Acute (ah-KUT)
- Adenitis (ad-en-NI-tis)
- adenocarcinoma(ah-deh-no-kar-sih-NO-mah)
- adenoids (AD-eh-noidz)
- adenoidectomy (ah-deh-noyd-EK-to-me)
- adenoma(ah-deh-no-mah)
- adenopathy (ah-deh-NOP-ah-the)

glossary

- Adrenal cortex (ad-DRE-nal KOR-teks)
- Adrenal glands (ah-DRE-nal glanz)
- Adrenalectomy (ah-dre-nal-EK-to-me)
- Adrenopathy (ah-dre-NOP-athe)
- Air sacs (ayr-saks)
- Albuminuria (al-bu-men-U-re-ah)
- Allergist (AL-er-jist)
- alopecia(ah-lo-PE-shah)

glossary

- Alveolar (al-VE-o-lar)
- Alveolus (al-ve-O-lus)
- Alzheimer disease (ALTZ-hi-mer di-zez)
- amenorrhea(a-men-o-RE-ah)
- Amniocentesis (am-ne-o-sen-TE-sis)
- Anal (A-nal)
- anemia(ah-NE-me-ah)
- Anemic (ah-NE-mik)

glossary

- Anesthesiologist (an-es-the-ze-OL-o-jist)
- Aneurysm (AN-u-rizm)
- angina(an-ji-nah)
- angiography(an-je-OG-rah-fe)
- angioplasty(AN-je-o-plas-te)
- Ankylosing spondylitis(ang-ki-LO-sing spon-dih-LI-tis)
- ankylosis(ang-ki-LO-sis)

Please read

Face Mask:

The mask is designed to fit snugly over the patient's nose and mouth. However, gas often leaks round the side of the mask in edentulous patients. An obstructed airway may be relieved by the insertion of an Ouedel airway are sized from 0 to 4, with a size 3 used for adult female and 4 for adult males.

Nasopharyngeal airway can cause haemorrhage, unless they are inserted very gently, which may further threaten the airway.

colors

Albus :white

Chlor/o, chloros : green

Chrom/o :color (as compared to no color)

Cirrhos :orange – yellow

Cyan/o : blue

Erythr/o : red

Leuc/o , leuko :white

colors

- lutein :saffron – yellow
- melan/o : black
- poli/o :gray (relating to gray matter of the nervous system)
- rhod/o : red
- ruber, rubor : red , redness
- xanth/o : yellow , Yellowish

Abbreviations

- CC : chief complaint
- EOMI : extraocular muscles intact
- HEENT : head, eyes, ears, nose, throat
- H&P : history and physical
- HPI : history of present illness
- I&O : intake and output
- IPPA : inspection, palpation, percussion,
auscultation

Abbreviations

- PE(R) RLA : pupils equal (regular) react to light and accommodation
- PMH : past medical history
- R/O : rule out
- ROS : review of systems
- TPR : temperature, pulse, respiration
- ABC : aspiration biopsy cytology
- AFP : alpha-fetoprotein

Common terms in operating room

- Accountability
- Aseptic
- Bipolar diathermy
- Blood and blood products
- Cardiac defibrillation
- Cauterize
- Central sterile supply
- Circulator
- Cleaning
- Coagulation
- confidentiality
- Cryo-surgery
- CPR
- Discharge

Common terms ...

- Diathermy pad
- Disorientation
- Duty
- Endoscope
- ENT
- Gloving
- HSWA (health and safety at work act)
- Hyperpyrexia
- Hyperextension
- Identification
- Inflammation

Common terms ...

- Interview
- Lateral position
- lithotomy position
- maintenance solution
- muscular rigidity
- observation
- plasma expander
- plaster
- prophylactic
- questionnaire
- rattling
- restlessness

Common...

- research
- restricted area
- routines
- safeguards
- safety precaution
- scrubbing
- sweating
- total parenteral nutrition
- butterfly cannulae
- infiltration
- overload
- i.v bolus

Please read & translate

tracheostomy :

tracheostomy is used for airway control
in the following circumstances :

- to bypass upper respiratory tract obstruction
- for long term ventilation
- to facilitate suction of chest secretions
- for prevention of aspiration of gastric contents (for example, in bulbar palsy)

intubation

The airway must be patent and oxygenation of the patient is mandatory . Suxamethonium is the muscle relaxant with the fastest onset and is always used for emergency surgery , in patients with full stomachs, and in those who are at risk of regurgitation (for example, hiatus hernia). Experienced anaesthetists often use muscle relaxants of slower onset for elective surgical patient in whom they can be confident of airway control. Muscle relaxants should not be given inappropriately, for example in case of upper airway obstruction. If a patient is paralysed, and tracheal intubation, patency of the upper airway, and oxygenation are impossible, then hypoxaemia and death will occur .

جلسه دوم

root	meaning	example
- audi/o	hearing	audiometer
- bio	life	biogenesis
- caus,caut	burn	causalgia
- clas	break	osteoclasia
- duct	lead	abduct
- ectas	dilate	phlebectasia
- edem	swelling	edematous

Continue from previous page

- fiss	split, cleft	fissure
- flect	bend	anteflect
- iatr/o	treatment	geriatrics
- kin/e,kin/o	motion	kinetogenic
- ly/o,lys/o	dissolve	lysogen
- opia	vision	myopia
- opt/ico,opt/o	seeing	opticokinetic

Please read and translate

vascular access may be divided into venous (peripheral, central) and arterial . The novice anaesthetist will rapidly gain expertise in peripheral venous cannulation. We also think it important to become proficient in central venous cannulation and insertion of arterial cannulae, within the first few months of training . We have not included practical descriptions on how to undertake these procedures; these skills are best learnt by careful instruction from a senior anaesthetist .

Glossary

- **anomaly (an-NOM-ah-le)**
- **antemortem (AN-te-MOR-tem)**
- **antenatal (AN-te-NA-tal)**
- **ante partum (AN-te-PAR-tum)**
- **antiarrhythmic (an-te ah-RITH-mic)**
- **anticoagulant (an-tih-ko-AG-u-lant)**
- **antigen (AN-tih-jen)**

glossary

- **antihypertensive (an-ti-hi-per-TEN-siv)**
- **anuria (an-U-re-ah)**
- **aorta (a-OR-ta)**
- **aortic stenosis (a-OR-tik steh-NO-sis)**
- **apex (A-peks)**
- **aphakia (ah-FA-ke-ah)**

glossary

- **apnea (AP-ne-ah)**
- **areola (ah-RE-o-lah)**
- **arrythmia (a-RITH-ma-ah)**
- **arteriole (ar-TER-e-ol)**
- **arteriosclerosis (ar-ter-e-o-skle-RO-sis)**
- **artery (AR-ter-e)**

glossary

- **arthralgia (ar-THRAL-je-ah)**
- **arthrocentesis (ar-thro-sen-TE-sis)**
- **arthropathy (ar-THROP-ah-the)**
- **ascites (ah-SI-tez)**
- **asphyxia (as-FIK-se ah)**
- **asthma (AZ-mah)**

Please read and translate

Intravenous fluids and electrolytes are administered, often empirically, to replace or maintain the body's own requirements. Patients are debate about how long a patient should be without fluids or food before elective surgery : 4-6 hours is often taken as the minimum requirement for food and 2-4 hours for clear fluids, but many patients strave overnight for at least 12 hours before anaesthesia.

Prefixes and suffixes

- **phan/ero** : **visible, manifest**
- **phanerosis**
- **-oiesis** : **formation, production**
- **hemopoiesis**
- **top/o** : **place , location**
- **topalgia**
- **brachy** : **short**
- **toponarcosis**
- **brachydactylia**
- **Brev/i** : **short**
- **brachygnathous**
- **brevicollis**

Prefixes & suffixes

- **cel, coel** : hollow , cavity : **celiac , coelom**
- **mi/o** : less , decrease : **miosis**
miopragia
- **olig/o** : few, little : **oligomenorrhea**
- **opisth/o** :backward, behind : **opisthocheilia**
opisthoporeia
- **oxy** : sharp, quick : **oxyesthesia**

abbreviations

- **AF** : atrial fibrillation
- **AMI** : acute myocardial infarction
- **PAC** : premature atrial contraction
- **AR** : aortic valve regurgitation
- **AS** : aortic valve stenosis
- **ASD** : atrial septal defect

abbreviation

- **AV** : atrioventricular
- **BBB** : bundle branch block
- **CABG** : coronary artery bypass graft
- **JVP** : jugular venous pulse (pressure)
- **LVEDP** : left ventricular end diastolic
pressure
- **PAT** : paroxysmal atrial tachycardia

Common terms in anesthesia

- **ATN (acute tubular necrosis)**
- **Analeptic**
- **Antiangina Drugs**
- **Antiepileptic**
- **Antipyretic**
- **ARF (acute renal failure)**

Common terms ...

- **C (capillary blood)**
- **CO (cardiac output)**
- **Controlled ventilation**
- **CPAP(continuous positive airway pressure)**
- **Dead space**
- **DIC (disseminated intravascular coagulopathy)**

Common terms ...

- **Dromotropic Drugs**
- **ETT (endotracheal tube)**
- **ERV (expiratory reserve volume)**
- **E (expired gas)**
- **Extubation**
- **Field block**
- **Flowmeter**

Please read & translate

Crystalloids are isotonic solutions that have a similar fluid and electrolyte composition to the extracellular fluid .these Solutions are confined to the extracellular space in a ratio of 1:3 in terms of intravascular : interstitial volume . The two commonly available solutions are Hartmann's solution and 0.9% sodium chloride solution . The lactate in hartmann's solution is either oxidised in the liver , or undergoes gluconeogenesis . Both metabolic pathways use hydrogen ions so that mild alkalinisation occurs.it is important to remember that both these solutions add little to the intravascular volume .

Please read & translate

These are large molecules suspended in solution . They generate a colloid osmotic pressure and are confined to the intravascular space . They rarely cause allergic reactions as a side effect . Elimination is via the kidney . There are two main types in clinical practice : 1) modified gelatins , 2) hydroxyethyl starch . The modified gelatins are ‘ Haemaccel ‘ (polygeline) and ‘ Gelofusine ‘ (succinylated gelatin) . Hemaccel contains calcium, which can cause clotting in an intravenous infusion set when it becomes mixed with citrated blood and plasma .

Please read & translate

- **Clinical signs used to confirm tracheal intubation :**
 - **direct visualisation of tracheal tube through vocal cords .**
 - **palpation of tube movement within trachea**
 - **chest movements**
 - **breath sounds**
 - **reservoir bag compliance and refill**
 - **condensation of water vapour on clear tracheal tubes**

Adjective root / combining form

- **pachy : thick : pachyderma**
- **pale/o : old , primitive : paleogenetic**
- **platy : flat , wide : platyglossal**
- **ple/o : more : pleonexia**
- **poikil/o : irregular, varied : poikiloderma**
- **scler/o : hardness : sclerosis**
- **scoli/o : twisted, crooked : scoliokyphosis**

Adjectival root / combining form

- **stere/o** : solid, threedimensional : stereosc
-opic
- **tel/e, tel/o** : distand, end : telalgia
- **xer/o** : dry : xerochilia
- **sten/o** : narrow : stenosed
- **sinistr/o** : left , to the left : sinistrocular

Body fluids

- **chol/e,chl/o : bile**
- **chyle : milky fluid**
- **dacry/o, lacryma : tears**
- **galact/o, lac : milk**
- **hidr/o, sudor : sweat**
- **mucus : secretion of mucous membrane**
- **myx/o : mucus**

Body fluids

- **ptyal/o : saliva**
- **py/o : pus**
- **sangui, sanguin/o : blood , bloody**
- **serum : clear portion of blood fluid**
- **sial/o : saliva , salivary glands**
- **ur/e, ur/ea, ur/eo, ur/in, ur/ino, ur/o : urine**
urea

The anaesthetic machine

The novice anaesthetist must have a thorough knowledge of the basic workings of an anaesthetic machine and checking the machine must become a regular habit . The start of work in operating theatres should be signalled by a cacophony of alarms, as all the machines are checked before use . Do not assume , however , that , because the machine was checked early in the morning , nothing can go wrong for the rest of the day . Machines are moved and knocked, pipelines stretched and vaporisers changed .

Remain vigilant.

Functions of bags in breathing systems

- reservoir for gases . Although the machine can deliver flow rates of up to 10 – 20 l/min of gas . The patient has brief inspiratory flow rates of up to 30 l/ min. to facilitate the delivery of this high flow rate , a reservoir of gas must exist .
- monitoring of respiration .
- facilitating manual intermittent positive pressure ventilation .
- pressure limiting function . The bag can distend to large volumes without pressure within the system increasing greatly . This safety feature avoids barotrauma to the patient's lungs if the pressure limiting valve malfunctions or is omitted from the circuit .

glossary

- **Atelectasis : collapsed lung**
 - * **Atel : incomplete**
 - Ectasis : widening or dilatation**
- **Atherosclerosis : hardening by atheromas**
- **Atrophy : decrease in size of an organ**
- **Aura : a strange sensation coming before more definite symptoms of illness.**

Glossary

- Autopsy : auto (with one's own eyes)
opsy (to see) -
- Benign : not cancerous (*BPH*)
- Bilateral : Bi (two) ' lateral (side)
- Bile : chole or gall
- Breast : mast or mamm(a/o)
- Bursa : sac of fluid near a joint

abbreviation

- **Pawp** : pulmonary artery wedge pressure -
- wpw** : wolf parkinson white
- **BE** : barium enema
- **BM** : bowel movement
- **CBD** : common bile duct
- **GI** : gastrointestinal

abbreviation

- **ACH** : acetyl choline
- **ANS** : autonomic nervous system
- **CBF** : cerebral blood flow
- **CSF** : cerebrospinal fluid
- **NREM** : non rapid eye movement
- **PNS** : peripheral nervous system

Common terms

- **FRC : functional residual capacity**
- **GA : general anesthesia**
- **GFR : glomerular filtration rate**
- **HBS Ag : hepatitis B surface Antigen**
- **HICCUP : hiccough**
- **Hypercarbia : hypercapnia**

comprehension

In the operating theatre, humidification is usually carried out by a passive method using a “ heat and moisture exchanger “ filter . The filter is connected between the breathing circuit and the laryngeal mask or endotracheal tube . A hydrophobic membrane within the filter acts to retain water vapour and heat and helps maintain the humidity of anaesthetic gases in the patient’s respiratory tract . The filter is disposable , has low resistance to gas flow and removes bacteria and viruses . It prevents contamination of the breathing circuit and must be changed after every patient.

monitoring

An important source of anaesthetic-related morbidity and mortality remains human error. All anaesthetists have tales of drug administration errors and “near-misses” those anaesthetists who claim never to have problems are either doing insufficient work or are economical with the truth. A critical incident register is recommended in every anaesthetic department .

monitoring

A critical incident is an untoward event ,which if left uncorrected , would have led to anaesthetic-related morbidity and mortality . It includes many events ranging from disconnection of the breathing circuit to unrecognised oesophageal intubation and severe bronchospasm. It is hoped that better monitoring will reduce the incidence of these complications.

Body substances

- **adip/o : fat**
- **amyl/o : starch**
- **cerumen : earwax**
- **collagen : fibrous protein of connective tissue, cartilage, bone, and skin -**
- **ele/o, ole/o : oil**
- **ferrum : iron**

Body substances

- **glyc/o, sacchar/o, sacchar/i : sugar**
- **hal/o : a salt**
- **heme : iron-based , pigment part of Hb**
- **hyal/o, hyalin : glassy , translucent
substance**
- **sebum : sebaceous gland secretion**

pathology

- ***cholelithiasis*** : the presence of gallstone in the gallbladder
- ***cirrhosis*** : chronic disease of the liver with degeneration of liver cell
- ***colonic polyppsis*** : polyps (small growth) protrude from the mucous membrane lining the colon
- ***diverticulosis*** : abnormal condition of small sacs or pouches (diverticula) in the wall of the intestine

Pathology

- *jaundice (icterus)* : yellow-orange coloration of the skin and other tissues
- *acromegaly* : enlargement of extremities caused by hypersecretion of the anterior portion of the pituitary gland after puberty
- *goiter* : enlargement of the thyroid gland

Remember

- **be kind** : patients are very vulnerable
- **be prepared** : plan your anaesthetic
- **be professional** : try to Humphrey Bogart's definition of a professional as somebody who can still give their best performance when they feel least like it .

Pathology

Fibroid : Benign tumors in the uterus .

Leiomyoma : tumor of smooth or involuntary muscle (lei/o : smooth)

Lymphoma : malignant tumor of lymph node and lymphatic tissue

.

Pathology

Hodgkin disease : an example of a
lymphoma

mononucleosis : acute infectious disease
with enlargement of lymph
nodes and increased of
lymphocytes and monocytes .

Pathology

Sarcoidosis :inflammatory disease in which small nodes, or tubercles , from in lymph nodes and other organs. (sarc/o : is flesh)

Cryptorchidism :condition of undescended testis .

hydrocele : sac of clear fluid in the scrotum .

Pathology

varicocele :enlarged , swollen veins near a testicle .(varico :swollen veins.

Ankylosing spondylitis : chronic, progressive arthritis with stiffening of joints, primarily of the spine and hip.

carpal tunnel syndrome :compression of the median nerve as it passes between the ligament and the bones and tendons of the wrist.

Pathology

Gouty arthritis : inflammation of joints caused by excessive uric acid (gout)

Muscular dystrophy : an inherited disorder characterized by progressive weakness and degeneration of muscle fibers.

Monitoring

The continuous *observation* of the patient's *colour* , *chest movement* and *pattern of respiration* , absence or presence of *sweating* and *lacrimation* , reaction of the *pupil*, use of a **stethoscope**, and **palpation** of a peripheral pulse provide essential basic monitoring of the patient .much useful information can be obtained by simple observation , palpation , and auscultation .

Monitoring

- Oximetry* is unreliable in the following instances : -
- excessive movement
 - venous congestion
 - excessive illumination
 - nail polish / false nails
 - intravenous drugs ; methylene blue .
 - carbon monoxide poisoning

Monitoring

A low oxygen saturation ($SpO_2 < 90\%$) demands an immediate response . **Oxygenation** of tissues **depends on** the inspired oxygen concentration , **lung function** , **hemoglobin concentration** and **cardiac out put** . If necessary , deliver 100% oxygen to the lungs while determining the cause of the hypoxemia and starting appropriate treatment.

Glossary

Cardiomyopathy : disease of heart muscle

Cataract : clouding of the lens of the eye

Cellulitis : inflammation of soft tissue

Chemotherapy : treatment with drugs ; most often used in treatment for **cancer** .

Cholelithiasis : the presence of gallstone in the gallbladder.

Glossary

Chondroma : benign tumor of cartilage

Chronic : lasting over a long period of time

Cirrhosis : chronic liver disease with deterioration of liver cells

Clavicle : collar bone

Coccyx : tailbone

Colitis : inflammation of the colon

Glossary

Colonic polyposis : growths or masses protruding from the mucous membrane lining the colon

Colposcopy : visual examination of the vagina and cervix

Conization : removal of a wedge-shaped piece of tissue from the cervix as diagnosis and treatment of early cancer of the cervix

Glossary

Conjunctiva : thin protective membrane over the front of the eye and attached to the eyelids

Corium : middle layer of the skin below the epidermis (dermis)

Cornea : transparent layer over the front of the eye

Abbreviation

RAS : reticular activating system

IBD : inflammatory bowel disease

IVC : intravenous cholangiogram

BK : below the knee

C : cervical vertebra

DTR : deep tendon reflex

Abbreviation

ICP : intracranial pressure

LMN : lower motor neuron

LP : lumbar puncture

MS : multiple sclerosis

TIA : transient ischemic attack

UMN : upper motor neuron

VEP : visual evoked potential

READ & TRANSLATE

Signs of severe allergic drug reactions :

- Pruritis - Flushing
- Erythema -Angioedema
- Nausea, vomiting , and diarrhea
- coughing on induction of anesthesia
- laryngeal edema with stridor
- bronchospasm with wheeze
- Hypotension - cardiovascular collapse
- DIC - sudden death

زندگی

لذت حیات و حقیقت زندگی را در خدمت به
هم نوع و محبت به مردم جستجو نمائید .

Pathology

Alzheimer disease : brain disorder marked by deterioration of mental condition (**dementia**)

Concussion : brief loss of consciousness due to injury to the brain

Epilepsy : chronic brain disorder characterized by recurrent seizure activity

Pathology

Glioblastoma : malignant brain tumor arising from neural cells (supportive and connective tissue in the brain) . **Blast** : **immature**)

Multiple sclerosis : destruction of the myelin sheath on nerve cells in the **CNS** .with replacement by plaques of sclerotic tissue

Pathology

Syncope : **Fainting** : sudden and temporary loss of consciousness due to inadequate flow of blood to the brain

Asphyxia : extreme decrease in the amount of oxygen in the body with increase of carbon dioxide leads to loss of consciousness or death.

Pathology

Asthma : spasm and narrowing of bronchi leading to bronchial airway obstruction

Emphysema : hyperinflation of air sacs with destruction of alveolar walls. Along with chronic bronchitis and asthma.

Hemoptysis : spitting up of blood .

Hemothorax : blood in the pleural cavity .

Pathology

Pneumoconiosis : abnormal condition of dust in the lung

Alopecia : absence of hair areas where in normally grows; baldness

Gloucoma : increase in pressure (fluid accumulation) within the chamber at the front of the eye

Pathology

Melanoma : malignant tumor of pigmented cells (melan/o : black) that arises from a nevus (mole) in the skin .

Nevus : pigmented lesion in or on the skin : a mole

Tinnitus : abnormal noise (ringing , buzzing , roaring) sound in the ears.

Pathology

Albuminuria : abnormal condition of protein in the urine .

Anuria : abnormal condition of no urine production

Dysuria : painful urination

Glycosuria : abnormal condition of sugar in the urine

Pathology

Hematuria : abnormal condition of blood in the urine .

Nephrolithiasis : abnormal condition of stones in the kidney .

Oliguria : diminished urine secretion in relation to fluid intake .

Uremia : condition of high levels of uria in the blood

Disease

amyotrophic lateral sclerosis : progressive wasting , or atrophy , of muscles (myo) resulting from a disease condition characterized by hardening (scler) of nerve tissue , commonly referred to as *lou gebrig's disease* . It progresses up one side (lateral) of the body .

Disease

Cerebral aneurysm : sac formed by the localized dilation of a blood vessel in the cerebrum.

Cerebral palsy : form of paralysis (palsy) caused by a cerebral defect characterized by involuntary motions and difficulty in the control of voluntary muscles .

Disease

Cerebral vascular accident : sudden interference (accident) in brain function resulting from an interruption in the **blood flow** through the blood vessels in the brain . Also know as a **stroke** or **CVA** , commonly referred to as a **brain attack** . A stroke can be caused by a **clot** in a vessel that cuts off supply of blood to parts of the brain , an **ischemic stroke** , or by a **break** in a blood vessel in the brain , a **hemorrhagic stroke**.

Disease

Encephalitis : inflammation of the brain.

Encephalopathy : general term meaning a disease of the brain .

Epilepsy : disorder characterized by **seizures** , **convulsions**, or **temporary loss** of **consciousness** without convulsions . The person is seized (lepsy) over (epi) the whole body .

Disease

Seizure : a hyperexcitation of nerves leading to sudden , violent involuntary movement .

Convulsion : violent spasmodic contractions of muscles .

Focal seizure : a if motor , sensory, or autonomic disturbance that commonly being in one part (focal) body and may spread to other parts , resulting in a generalized convulsion .

Disease

Grand mal seizure : form of epilepsy in which there is a **sudden loss of consciousness** followed immediately by generalized convulsions . In ancient times it was considered the great (grand) illness (mal) ; also know as a **tonic-clonic seizure** .this form of epilepsy may be preceded by an aura , which is the sensation that something is going to happen.

Disease

Jacksonian seizure : form of epilepsy that involves only one half of the body ; named for J.H.Jackson , a physician who first described the condition .

Petit mal seizure : form of epileptic seizure in which there is a **momentary loss** of consciousness with only **minor muscle** movement . It is the little (petit) illness (mal) ; also referred to as **absence seizure** , because of the **affect on** the level on **consciousness** .

Signs & symptoms

Adiadochokinesis : inability to perform muscle movements requiring muscles to work in sequence (diadochos)

Agnosia :inability to recognize objects or have knowledge of objects through the senses; for example , an inability to recognize different coins by feeling them .

Signs & symptoms

Apoplexy : sudden loss of consciousness in which a person appears to be struck down (apoplexy) . Commonly referred to as a stroke .

Apraxia : the inability to perform purposeful actions or functions such as walking , speaking , or manipulating objects .

Signs & symptoms

Athetosis : condition in which the hands or other parts of the body do not remain in a fixed (thet) position . An example is ceaseless wringing movement , especially of the hands .

Bruxism : habitual purposeless grinding of teeth , especially occurring sleep .

Signs & symptoms

Chorea : ceaseless , rapid . Jerky movements that may appear to be well coordinated , like dancing (chorea)

.

Dyskinesia : difficulty in performing voluntary muscular movement .

Gait : manner of walking

Festination : gait marked by an involuntary hurrying (festina) walk .

Signs & symptoms

Scissors gait : manner of walking in which the knees are crossed over in scissor fashion .

Neuralgia : pain along the course of a nerve

Opisthotonos : condition in which there is severe muscle spasm or tension (tonos) resulting in a backward (opistho) curving of the body .

Paresthesia : abnormal sensation , such as numbness or tingling , around a part .

Estimation of blood loss

Surgeons cause blood loss and it is in their nature always to underestimate that loss . As an anaesthetist you must try to assess accurately the amount of blood shed and replace it with an appropriate intravenous solution . There are four main **ways of estimating blood loss** : **A)** clinical observation , **B)** weighing of swabs , **C)** volume of suction , **D)** dilution techniques

Transfusion

the abnormalities in **PT and PTT** are normally corrected by the administration of **FFP** (4 units) . A **low platelet** count should be restored to above $100,000 / \text{mm}^3$ by the administration of 6-8 units of **platelets**. **Low fibrinogen** levels are treated with **cryoprecipitate** aiming for a level of $> 1 \text{ g / l}$. If the patient has an arterial **pH < 7.2** and is continuing to bleed , the administration of bicarbonate; 50 ml of 8.4% solution should be considered .

Abbreviations

CBR : complete bed rest

RBR : relative bed rest

CBS : chronic brain syndrome

Ca: carcinoma (cancer)

ASHD : arteriosclerotic heart disease

IHD : ischemic heart disease

MD : muscular dystrophy

Abbreviations

CP : cerebral palsy

URI : upper respiratory infection

UTI : urinary tract infection

FUO : fever unknown origin

MR : mitral regurgitation

MR : mental retard

AS : aortic stenosis

Abbreviations

AS : ankylosing spondilitis

AR : aortic regurgitation

MS : mitral stenosis

MS : multiple sclerosis

AI : aortic insufficiency

M : murmur

UP. : upright

عزت نفس

من همیشه تلاش می کنم تا خود را هر روز بهتر از پیش آماده سازم ، اما آنچه را که امروز هستم دوست دارم .

Signs & symptoms

Sensory ataxia : loss (**a**) muscle coordination (**taxia**) , because of a loss feeling (sensory) , especially the sensation of position and movement .

Aphasia : loss (**a**) of the ability to speak (**phasia**)

Receptive aphasia : inability to understand (**receive, receptive**) language.

Signs & symptoms

Expressive aphasia : inability to express words by speaking or writing .

Agraphasia : form of aphasia in which the person is unable (**a**) to write (**graphia**) .

Aphonia : the loss (**a**) of the voice (**phonia**)
Paralytica is loss of the voice resulting from a paralysis of the **laryngeal nerves**.

Signs & symptoms

Dysphonia : difficulty (**dys**) in speaking (**phonia**)

Dysarthria : imperfect (**dys**) articulation (**arthria**) of speech; difficulty in putting words together ; a dis (**dys**) jointed (**artic**) type of speaking .

Dysphasia : impairment (**dys**) of speech (**phasia**) .

Signs & symptoms

Singultus : hiccup.

Stereognosis : ability to have knowledge(**gnosia**) of the solidness (**stereo**) of an object ; the ability to tell the different thickness of objects.

Stupor : partial or nearly complete state of unconsciousness.

Tic douloureux : sudden spasmodic involuntary muscle contraction (**tic**) that is accompanied by pain (**douloureux**).

Signs & symptoms

Tremor : an involuntary shaking (**tremor**)

Resting tremor : shaking that occurs when a person is resting .

Intention tremor : shaking that occurs when a person attempts to do something (**intent**)

Heart (diagnosis)

Acrocyanosis : bluish tinge (**cyano**) to tips(**acro**) of the extremities.

angina pectoris : strangling(**angina**) pain in the chest area (**pectoris**)

Apical rate : pulse rate at the apex (**apical**) of the heart .

Bruise : discoloration of the skin that results from the breaking (**bruise**) of superficial blood vessels with the release of blood into the tissue.

Claudication : lameness or limping (**claudication**) that results from a decrease in the blood supply to the legs.

Heart (diagnosis)

Bruit : abnormal sound heard while listening with a stethoscope over a partially obstructed vessel.

Ecchymosis : condition in which there is an outpouring (**ec:ex**) of fluid (**chym**) (blood) under skin , resulting in a purple spot.

palpitation : awareness of an abnormally strong or abnormally rapid beating of the heart.

Heart (diagnosis)

Plethysmography : test done to measure and record (**graphy**) variation in size (**plethysmo**) of blood vessels of extremities because of variations in the amount of blood passing through a blood vessel or contained in a part.

Thrill : fine vibration felt by the hand on the chest surface , resulting from o loud **murmur**.

Heart

Avascular necrosis :condition in which there is death of tissue (**necrosis**) because of the lack (a) of blood supply through the blood vessels(vascular) .

Circulatory collapse : sudden failure(**collapse**) of the circulatory system and respiratory system, resulting in a profound degree of shock.

Heart

Commotio cordis : cardiac (**cordis**) arrest resulting from a blunt force (**commotio**) to the chest .(**Commotio** : **concussion**)

Congenital heart defect : heart defect that a child is born (**genital**) with (**con**) .

Anomaly : condition that is away (**a**) from the normal(**nomaly**) .

Heart

Coarctation of the aorta : narrowing (**arctation**) of the aorta resulting in the walls of the aorta coming close(**co**) together .

Hypoplastic left ventricle : condition in which the left ventricle is under (**hypo**) developed (**plastic**) and is too small to accommodate circulation to the body .

Heart

Patent ductus arteriosus : condition in which the channel (**ductus**) present in the fetus that goes between the pulmonary artery and the aorta (**arteriosus**) remain open (**patent**) after birth.

Tetralogy (of Fallot) : combination of four (**tetralogy**) congenital defects of the heart . The combination of defects was named by **French physician Etienne-Louis Arthur Fallot** .

The four defects of Tetralogy

Pulmonary stenosis : the opening to the lungs is narrowed.

Interventricular defect : there is a hole (**defect**) between (**inter**) the ventricles; also referred to as ventricular septal defect .

Dextroposition of the aorta : the aorta is located on the right (**dextro**) side (**position**) of the heart rather than the left side and thus carries unoxygenated blood to the body .

Right ventricular hypertrophy : the right ventricle chamber of the heart has grown (**trophy**) larger (hyper) than normal.

Heart

Transposition of the great arteries : situation in which the two major arteries , the pulmonary artery and the aorta are located (**position**) on the opposite side (**trans**) of the heart from normal . The aorta comes off the right side the heart , resulting in unoxygenated blood being sent to the body through the aorta and oxygenated blood sent back to the lungs through the pulmonary artery.

Disease

Congestive heart failure : condition in which the heart fails to pump blood adequately , and there is resultant congestion or backup of blood.

Cor pulmonale : form of heart (**cor**) disease resulting from disease in the lungs (**pulmonale**)

Coronary occlusion : obstruction (**occlusion**) in the circulation to the heart .

Embolus : ball (**bolus**) of clotted blood and possibly other substances that is carried within (**em**) the blood stream.

Disease

Heart attack : sudden seizure (**attack**) of pain and inability of the heart to function because an interference in the coronary circulation .

Hemangioma : tumor (**oma**) consisting of blood (**hem**) vessels (**angio**) ; sometime referred to as angioma .

Myocardial insufficiency : action of the muscle (**myo**) of the heart is not (**in**) adequate (**sufficient**)

Disease

Thromboangitis obliterans : inflammation of a blood vessel(**angi**) that results in the formation of a blood clot (**thrombo**) that obstructs (**obliterans**) the flow of blood through the vessel.

Thrombophlebitis : inflammation of a vein that results in the formation of a blood clot.

Heart

Valvular insufficiency : valve does not work efficiently .

Valvular regurgitation : valve does not close completely , allowing some blood to flow (**gurgita**) back (**re**)

varicose veins : enlarged, twisted varix veins, particularly in the lower extremities.

Heart

Mitral commissurotomy : surgical cutting (**otomy**) of the seam (**commissure**) of the two flaps of the mitral valve ; an operation for mitral stenosis.

Portocaval shunt : procedure in which a branch of the portal vein (**porta**) is sewn to the vena cava (**caval**) . The portal blood is thus diverted (**shunt**) around the liver .

Treatment

Cardiotonic Drugs : class of medicines that invigorate and strengthen(**tonic**) of the heart (**cardio**).

Chronotropic drug action: action of a drug that changes (**tropic**) the timing (**chrono**) of the heart rate . A **positive** chronotropic action **increases** the **heart rate** , and a **negative** chronotropic action **decreases** the **heart rate** .

Treatment

Dromotropic drug action : action of a drug that changes (**tropic**) the rate at which the conduction of the electrical impulse runs (**dromo**) through the heart . A **positive** dromotropic action **speeds** the conduction rate, and a **negative** dromotropic action **decreases** the conduction **rate**.

Treatment

Inotropic drug action : action of a drug that changes (**tropic**) the action of the heart muscle fibers (**ino**) .a positive inotropic action increases the ability of the muscle to contract , and a negative inotropic effect decreases the ability of the heart muscle to contract .

Treatment

Thrombolytic agents : drugs that break apart (lytic) blood clots (thrombo) .

Vasoconstrictor : drugs that act to narrow or constrict the blood vessels(vaso)

Vasodilator : drugs that act to widen , or dilate , the blood vessels (vaso)

Respiratory system

Meatus : channel (**meatus**) with an opening in the sides of the nasal cavity for the passage of air and mucus from the paranasal sinuses .

Nares : external openings of the nose .

Nasal septum : wall (**septum**) dividing the nose cavity into right and left halves.

Respiratory system

Nasal vestibule : space just inside (**vestibule**) the opening of the nose .

Nostrils : holes(**trils**) in the nose .

Olfactory cells : cells that function in the sensation of **smell** (**olfaction**) located in the nose .

- **Osm** : root word for the sense of **smell**.

Respiratory system

Paranasal sinuses : airspaces (**sinuses**) that are near (**para**) the nasal cavity .

Rhino : **root word** meaning nose .

Vibrissae : visible hairs in the nose ; these hairs **vibrate** (**vibrissae**) on respiration .

Cilia : hairlike (cilia) structures in the lungs that **move** secretions out of the lungs and **protect** the lung from outside **contaminants** .

Respiratory system

Parietal pleura : section of the pleura that covers the **walls** (parietal) of the thoracic cavity .

Visceral pleura : section that covers **the organs** (viscera) of respiration , the lungs .

Parietal space : **negative – pressure** space between the two pleura; the pressure is negative and is **responsible** for holding the lungs in an inflated condition .

Respiratory system

Pleural fluid : very thin coating of fluid between the two pleural membranes.

Aer- : root word meaning air .

Exhale : to force (**hale**) air out (**ex**) .

Inhale : to pull (**hale**) air in (**in**) .

Spiro- : root word meaning to breathe .

Anosmia : loss (**an**) of the sensation of smell (**osm**)

Respiratory system

Catarrh: excessive **flowing** (**rrh**) like water(cata ,as in cataract) of secretion from mucus membranes .

Deviated septum : dislocation (**deviate**) of the wall (**septum**) between the two nostrils .

Dysosmia : distorted (**dys**) sense of smell(**osm**)

Respiratory system

Epistaxis : condition in which there is blood dripping (**staxis**) upon (**epi**) the lining of the nose ; commonly called a **nosebleed** .

Hyperosmia : **oversensitivity** (hyper) to the sense of **smell** (osm)

Nasal polyp : **outgrowth** (**polyp**) of the mucous membrane lining the nose ; polyps can **occur anywhere** along the respiratory system .

Respiratory system

hoarseness : type of sound made when there is inflammation in the larynx . The sound is harsh (**hoarse**) , is weak in intensity , and sounds like the vocal cord are wrapped in a **husk** ; thus it is also known as a '**husky voice**'

Mucoviscidosis : condition in which the mucus (**muco**) becomes thick (**viscid**); a description of one of the symptoms of **cystic fibrosis** .

Respiratory system

Pneumoconiosis :condition (**iosis**) of the lung (**pneu**) caused by **inhalation** of various type of **dust particles**(**coni**) ; there are many variations of this disease .

Pneumocystis pneumonia : pneumonia in which the **alveoli** in the lungs become **honey – combed** and **saclike** (**cystis**) ; the causative **agent** is **pneumocystis carini**; therefore the disease is sometimes referred to as **pneumocystis carini pneumonia** , or **PCP**.

Examples of pneumoconiosis

Asbestosis : asbestos

Baritosis : barium

Berylliosis : beryllium

Black lung : coal

Byssinosis : cotton, flax, hemp particles

Siderosis : iron

Silicosis : silicon

Stannosis : tin

Respiratory system

Pneumonia : general term describing a condition (**ia**) of the lung (**pneum**), usually **resulting** from an **inflammation** .

Psittacosis : **infection** of the lungs from a **bacteria** usually **only found** in **birds** such as **parrots** (**psitta**).

pleurisy : **inflammation** (**isy : itis**) of the **membrane** covering the lung (**pleur**) and **lining** the wall of the thorax .

Respiratory system

Pleural effusion : flowing of fluid (**effusion**) into the **pleural space** . There is **excessive fluid** between the **visceral** and **parietal** pleura , this **causes collapse of the lung** equal to the amount of fluid in the space .

Finger clubbing : change in the **angle** between the **nail bed** and the **cuticle** in which the **fingertips** take on a **club appearance** ; this is **sometimes** associated with lung disease .

Respiratory system

Obstructive dyspnea : difficulty (dys) breathing caused by a **blockage (obstructive)** in the lungs caused by **secretions** or on **inhaled object** .

Restrictive dyspnea : difficulty (dys) breathing caused by **damaged and stiff (restricted) lungs** .

Stertor: **heavy breathing sound** accompanying some conditions or disease ; commonly referred to as ‘ **snoring** ‘ .

Respiratory system

Stridor : crowing sound (stridor) mainly during inhalation caused by a **partial bloking** of the **throat** (**pharynx**) , **voice box** (**larynx**) and windpipe (**trachea**) .

Wheezing : whistling , musical (wheeze) sound on **expiration** from a **partially obstructed airway** .

Diagnosis

Adventitious breath sounds : **abnormal** (adventitious) or **unusual noise** heard in the lungs through a stethoscope .

Bronchophony : **abnormal increase** in the **intensity of the voice sounds** (phony) heard while listening to the lungs (broncho).

Pleural friction rub : sound (rub) heard **as inflamed** pleura rub against (friction) each other .

Diagnosis & treatment

Rales : abnormal **rattling (rale)** or **crackling sound** from the lungs .

Rhonchi : **coarse snoring** (rhonchi) sound from the lungs .

Antitussive : drug that works **against (anti)** , or **controls** , **coughing (tussive)**

expectorant : drug used to help **expel (ex) mucus** from the chest . (**pect**)

Mucolytic agent : a drug that **breaks down (lytic) mucus** (muco)

Risk factors

Risk factors for the development of **coronary artery disease** include : (1) elevated plasma concentrations of cholesterol , specifically low density lipoprotein cholesterol (**LDL-C**) ; (2) **cigarette smoking** ; (3) **hypertension** ; (4) **diabetes mellitus** ;(5) **advancing age** ;and (6) **male sex** . **Family history as a risk factor** is based on the **presence or absence** of these **six characteristics** .

Angina pectoris

Angina pectoris is the symptomatic manifestation of **myocardial ischemia**, which is **caused** by **imbalances between myocardial oxygen supply and demand**. **Pain characterized** as angina pectoris is typically (1) **substernal chest pain** that may radiate to the left neck and arm, (2) **pain initiated** by **exercise**, and (3) **pain relieved** by **rest** and / or **sublingual nitroglycerin**. **esophageal spasm** can produce similar pain that is also relieved by smooth muscle relaxant effects of nitroglycerin.

Ejection fraction

The **ejection fraction** equals the **stroke volume** divided by the **end diastolic volume** . **Stroke volume** is the **difference** between the **end diastolic volume** and **end systolic volume** . As such, ejection fractions may be useful **indicators** of **ventricular function** . Ejection fractions can be measured by isotope imaging **angiography or echocardiography** . A **normally** contracting left ventricle will eject **55 % to 75 %** of its end diastolic volume as stroke volume with **each cardiac contraction**.

Monitoring

Perioperative monitoring is dictated by the **complexity** of the operative procedure and **severity** of the coronary artery disease . An important goal in selecting monitors uniquely for patients with coronary artery disease is **early detection** of **myocardial ischemia** and / or **reduced myocardial contractility** .

Raynaud's phenomenon

This disease is characterized by **cold-induced arterial spasm** in the **extremities**, **manifesting** most often in **adult females** and invariably in the presence of underlying disease (**scleroderma** , **systemic lupus erythematosus**). Arterial **spasm and pain** may be **relieved** on occasion by intravenous administration of **reserpine** or **guanethidine** into a tourniquet – isolated extremity. In **severe cases** interruption of the **sympathetic nervous system supply** to the hand may be considered (stellate ganglion block) .

Cystic fibrosis

This is an **inherited** disease characterized by a **defect** in **exocrine gland secretion**, leading to **production** of chemically abnormally **sweat and viscous mucus** (chloride concentrations > 60 mq/l).

impaired clearance of **viscous secretions** leads to mucous plugging of the **airways** with resulting **obstruction** to **expiratory airflow**, **dyspnea**, **productive cough**, and **secondary bacterial infection**. **Extra pulmonary manifestations** of cystic fibrosis include **pancreatic insufficiency**, **cirrhosis of the liver**, and **gastrointestinal obstruction** (**meconium ileus**, **vitamin K deficiency**).

Adult respiratory distress syndrome

ARDS ; is characterized by abnormal **permeability of pulmonary capillary endothelium** , leading to **leakage of fluid containing high concentrations of protein into the pulmonary parenchyma and alveoli**. Despite improvements in supportive therapy , the **mortality** rate associated with ARDS over the past 30 years remains unchanged at **60% to 70 %** . **Mortality** from ARDS is most often **due to multisystem organ failure** and **systemic hemodynamic instability rather than to lung dysfunction** .

Spinal cord transection

Anatomically , the spinal cord is not divided , but the effect physiologically is the same as if it were transected .it is estimated that cervical spine injury occurs in **1.5 % to 3 %** of all major trauma victims. The trauma patient's neck must be promptly immobilized , preferably with a rigid collar . Vertebral injury can occur without cord damage , as the spinal canal is widest in the cervical region . In an alert patient , the absence of neck pain or tenderness virtually eliminates the presence of cervical spine injury .

Insomnia

Insomnia is the most common sleep disorder . It occurs especially in females and elderly patients. About **10% to 15% of patients** with chronic insomnia have underlying problem of substance abuse , especially alcohol . Benzodiazepines because of their efficacy and safety are the drugs of choice for the treatment of insomnia .

Urinary system

Trigone : triangular (**trigone**) internal surface of the posterior wall of the bladder ,sometimes referred to as the trigone vesicae because the triangle is in the bladder (vesic) . The **three corners** of the trigone are marked by the opening of the **two ureters** and the **urethera** .

ureteric orifice : small opening , or mouth , (orifice) of the ureter as it enters the bladder from the kidney . There are two of these openings.

Urinary system

Micturate : to make water (**mict**) , as in urination (ur) .

Void : to **empty** (void) the bladder .

Enuresis : involuntary (en:in) passing of urine (uresis)

ESRD : end stage renal disease , a condition in which there is irreparable disease of the kidney .

Hydroureter : overdistention of the ureter from the backup of the water of urine .

Urinary system

Incontinent : pertaining to the condition in which there is **lack of (in) ability** to contain (continent) , or hold , urine .

Kidney agenesis : absence (a) of one kidney at birth (genesis) .

Nocturia : frequent urination during the night (**noct**) .

Nocturnal enuresis : involuntary urination that occurs at night ; also known as **bedwetting** .

Urinary system

Polydipsia : condition in which a person has **frequent** (poly) and excessive episodes of **thirst** (**dipsia**) ; this usually accompanies **polyuria** .

Vesical fistula : abnormal openings (**fistula**) between the bladder (vesical) and other nearby organs .

Ureteral colic : severe **pain** (**colic**) in the ureter .

Renal calculi : kidney **stones** ; also referred to as **nephrolithiasis**

Urinary system

Peritoneal dialysis : method of **separating out** (**dialysis**) waste products by special procedures utilizing the peritoneal cavity and membrane . There is a continuous flow of solution into and out of peritoneal cavity .

Nephropexy : surgical fixation (**pexy**) of a floating kidney .

Endocrine system

Hypothalamus : is the structure located **under** (hypo) the **thalamus** in the brain that has an **endocrine function** . Among other hypothalamic functions, it **manufactures** two hormones that are stored in the posterior pituitary gland . It also produces **releasing** and **inhibitory factors** that **control the secretions** of the **anterior pituitary gland** .

Hypothalamus

the **releasing and inhibitory hormones and factors of hypothalamus** are the following :

- **Corticotropin - releasing factor (CRF)**
- **Gonadotropin – releasing hormone
(GnRH)**
- **Growth hormone – releasing factor
(GHRF)**
- **Growthhormone releasing – inhibiting
hormone (GHRIH)**

Continuous from previous page

- Melanocyte – stimulating hormone – inhibitory factor (**MIF**) (**MEL**)
- Melanocyte – stimulating hormone – releasing factor (**MRF**)
- Prolactin – inhibitory factor (**PIF**)
- Thyrotropin – releasing hormone (**TRH**)

Hypothalamus

Inhibitory factor or hormone : substance (**factor**) that has the function of (**ory**) preventing (inhibit) the **release of a specific hormone**. For example , prolactin – inhibitory factor (PIF) prevents the release of the hormone prolactin .

Releasing factor or hormone : substance (factor) that has function of allowing hormones to be released into the bloodstream . For example , growth hormone – releasing factor (GHRF) allows growth hormone to get into the blood stream .

Pituitary gland or hypophysis

the pituitary gland , or hypophysis , is a gland under the cerebrum in the skull , in the **sella turcica** . It has anterior and posterior sections or lobes :

- **Adenohypophysis** : anterior lobe of the Pituitary (hypophysis) that is **glandlike** (adeno) structure .

Hypophysis

Hypophysis : another name for the pituitary gland denoting the fact that it **grows** (**physis**) under (hypo) the cerebrum .

Neurohypophysis : posterior lobe of the pituitary gland is a neural (neuro) extension of the brain .

Pituitary gland : named derived from an ancient belief that this gland produce spittle . The sound made when a person spits is somewhat like ‘ **ptu**’

Hypophysis

Sella turcica : bony structure holding the hypophysis that resembles a **turkish** (turcica) **saddle** (sella) .

adenohypophysis (anterior lobe) :

Adrenocorticotrophic hormone (**ACTH**) or corticotropin : Hormone that **stimulate** (tropic) the **adrenal** (adreno) **cortex** (cortico)

Hypophysis

Gonadotropin hormones : the hormones that **stimulate** (tropic) the release of **sex – related** (gonado) hormones.

Follicle – stimulating hormone (FSH) : hormone that **stimulates** the small, baglike (follicle) structures that produce the egg in the female ovary and sperm in the male testes .

Hypophysis

Intrestitial cell stimulating hormone (ICSH):

male hormone that corresponds to LH in the female and **controls the production of testosterone** by the interstitial cells in the testes .

Lactogenic hormone : hormone that **stimulates the production (genic) of milk (lacto)** . It is also referred to as prolactin , the hormone that favors (pro) the production of milk (lact) .

Hypophysis

Luteinizing hormone (LH) : hormone that affects the **yellow** (**lute**) areas in the ovary of the female .

Melanocyte – stimulating hormone (MSH) :
Hormone that **stimulates** the cells (**cyte**) that contain the **dark** (**melano**) **pigment** of the skin .

Hypophysis

Somatotropic hormone (STH) or Growth hormone (GH) : hormone that stimulates (tropic) the body (somato) to grow.

Thyroid stimulating hormone (TSH) : hormone that stimulates (tropin) the thyroid to produce thyroid hormones .

Hypothalamus – hypophysis

Oxytocin : hormone that causes a hastening (**oxy**) of the birth (**tocin**) of a child .

Vasopressin : hormone that helps maintain the pressure (**press**) in the blood vessels (**vaso**) . This hormone works against (**anti**) the excessive flow of urine (**diuretic**) and helps maintain the volume of fluid in the bloodstream , which directly blood pressure (**pressin**)

Hepatic blood flow

The liver receives a **dual afferent blood supply** from the hepatic artery (25% of the total flow but up to 50% of the hepatic oxygen requirements) and vein . Total hepatic blood flow is approximately 1450 ml / min or **about 30% of cardiac out put** .

Causes of decreases in hepatic blood flow include volatile anesthetic , surgical stimulation , intra abdominal operations , and fibrotic constriction characteristic of hepatic cirrhosis .

Cholecystectomy

Laparoscopic cholecystectomy :

- **impaired venous return owing to abdominal insufflation**
- **Risk of venous carbon dioxide embolism.**
- **intraoperative decompression of the stomach**
- **observation for accidental injury to abdominal structures .**
- **loss of hemostasis may require prompt laparotomy .**

Anemia

Anemia , like fever , is a **sign of disease** manifesting clinically as a numerical deficiency of erythrocytes . The most important adverse effect of anemia is decreased tissue oxygen delivery owing to the associated decrease in arterial content of oxygen (CaO_2) .

Compensation for decreased CaO_2 is accomplished by a rightward shift of the oxyhemoglobin dissociation curve and an increase in cardiac output .

Aging

- **Decline** in central nervous system **activity**
(decreased anesthetic requirements)
- **Disturbances** in sleep pattern (**daytime fatigue , sleep apnea syndrome**)
- **Decreased** responsiveness of the cardiovascular systemic nervous system stimulation(heart rate slows , blood pressure increases , cardiac output parallels decreased organ requirements)

Aging

- **Deterioration** of mechanical ventilatory function (decreased elasticity of lungs) and efficiency of gas exchange (decreased PaO₂)
- **Decreased** renal blood flow and glomerular filtration rate (less able to concentrate urine with fluid deprivation , vulnerable to hyponatremia)
- **Endocrine dysfunction** (diabetes mellitus , subclinical hypothyroidism)

Skeletal system

There are **two types** of coverings over bones :

- **Periosteum** : a fibrous membrane that covers the bones on all surfaces except at moving joints . Periosteum contain blood vessels that penetrate into the underlying bone

- **Articular cartilage** : covering of the bones at the joints .

Characteristics of bone

Density : term describing the structural strength and rigidity of a bone .

Depression : indentation in a bone

Opening : hole that goes through the bone

Projection : part of the bone that is elevated from a flat surface

Shape : general appearance of a bone

Surface : exterior boundary of a bone

Part of bone

Process : projection large enough to be grasped with the fingers .

Condyle : rounded , knuckle-like projection

Head : rounded projection beyond the neck of a bone

Malleolus : olus (small) malleo (hammer) :
small hammerlike projection

Crest : ridge on a bone

Line : prominent area of a bone that can be left

Spine : process with a sharp projection

Parts of bones

Apophysis : any growth (physis) away from (apo) the surface of a bone .

Diaphysis : shaft of a cylindrical bone ; the part of the bone between the ends of the sections that grow ; dia : between .

Epiphysis : part of the bone that is on (epi) the part of the bone that grows.

Metaphysis : part of bone next to the growth plate ; the wider part of the shaft of a long bone next to (meta) the epiphysis ; in children it is referred to as the **growth zone or growth plate** .

Thrombosis

Deep vein thrombosis (formation of clot in a blood vessel) and associated **pulmonary embolism** (fragment of a thrombus that breaks off and travels in the blood) are among the leading causes of postoperative **morbidity and mortality** . **Factors** that predispose to thromboembolism are **multiple** but often include events likely to be associated with anesthesia and surgery .

DVT

Diagnosis on the basis of **clinical signs** (**throbbing pain , edema**) is unreliable and **venography** may demonstrate negative results despite subsequent occurrence of pulmonary embolism. **Ultrasound** is a highly sensitive noninvasive method for detecting proximal deep vein thrombi (ileofemoral)

DVT Treatment

Heparin (5000 units iv) followed by a continuous intravenous infusion adjustment to maintain the activated partial thromboplastin time 1.5 to 2 times normal for 10 days , is the accepted treatment of proximal deep vein thrombosis .

Diagnosis of acute respiratory failure

- arterial hypoxemia ($\text{PaO}_2 < 60 \text{ mmHg}$ despite supplemental oxygen)
- hypercarbia ($\text{PaCO}_2 > 50 \text{ mmHg}$)
- decreased functional residual capacity
- decreased lung compliance
- bilateral diffuse opacification of the lungs on radiographs

Cor pulmonale

The normal pulmonary circulation is a highly distensible, low resistance, and low pressure; the mean pulmonary artery pressure is typically below 20 mmHg. Furthermore, the pulmonary circulation can normally accept substantial increases in blood flow with only small changes in pulmonary artery pressures. Ultimately, however, increases in pulmonary artery pressure due to elevations in pulmonary vascular resistance are responsible for the manifestations of Cor pulmonale.

Bronchodilators

Any reversible component of bronchoconstriction can be treated with aminophylline or beta-adrenergic agonist such as terbutaline or albuterol .Doses of aminophylline may require careful adjustment to compensate for decreased hepatic clearance of this drug in the presence of congestive heart failure .

Diuretics

Diuretics offer significant benefit in treating congestive heart failure due to increased vascular resistance . For example , excess fluid accumulation in the lungs interferes with optimal matching of alveolar ventilation to pulmonary blood flow . In addition , this excess fluid can contribute to the elevation in pulmonary vascular resistance .

Digitalis

A digitalis preparation will improve right and left ventricular function when congestive heart failure is present . Digitalis , however , must be used cautiously , since the risk of drug toxicity is increased in the presence of arterial hypoxemia , acidosis , and electrolyte imbalances common in patients with Cor pulmonale.

tamponade

Cardiac tamponade results from impaired diastolic filling of the heart due to continuous elevation of intrapericardial pressures. hemodynamic alterations depend on the amount and rapidly of accumulation of pericardial fluid .A large volume of pericardial fluid (80-100 ml) may be tolerated if the accumulation is gradual , allowing stretching of the pericardium . Conversely , acute accumulation of small volumes of pericardial fluid can produce cardiac tamponade.

Thromboangitis obliterans

Thromboangitis obliterans (Berger's disease) is an inflammatory and occlusive disease that involves arteries and veins . This disease has its greatest incidence in men , often of jewish extraction , between 20 years and 40 years of age . Although the cause of this disease is not known , there is an undeniable association with **cigarette smoking** . Cold and trauma are also associated with an exacerbation of disease process .

Prophylaxis

Small subcutaneous doses of heparin reduce the incidence of venous thrombus formation and subsequent pulmonary embolism in the postoperative period . The typical heparin regimen is 5000 U administered subcutaneously 2 hours preoperatively and then every 8 to 10 hours postoperatively for 4 to 5 days .

Fat Embolism

Fat embolism should be considered in patients who develop dyspnea , tachycardia , mental confusion , fever , and often petechial rashes over the upper part of the body 12 to 72 hours after trauma that includes multiple fractures or major fracture to long bones . The source of fat is controversial but may represent disruption of the adipose architecture of bone marrow .

Incentive spirometry

incentive spirometry is a type of voluntary deep breathing in which patients are given inspired volumes as a goal to achieve .this treatment also emphasizes holding the inhaled volumes to provide sustained inflations important for expanding collapsed alveoli . The major disadvantage is the need for patient cooperation to accomplish the treatment .

Adult Respiratory Distress syndrome

ARDS is characterized by abnormal permeability of pulmonary capillary endothelium , leading to leakage of fluid containing high concentrations of protein into the pulmonary parenchyma and alveoli . There are associated decreases in FRC and lung compliance and increased perfusion of unventilated alveoli , resulting in venous admixture and severe arterial hypoxemia .