



ကျန်းမာရေး

စေတနာမန်

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Health Messenger

**Distance Learning
Health Magazine**

BURMESE EDITION

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r y q & f y g

SAYTAMAN has introduced this system of icons which represent the main topics that are most relevant for the health worker. If the icon above is colored or "on" then one or more articles have been prepared for that topic in this issue. If the icon is "off" then there is no



a q ; y n m qllif & m t bd"gef

p? , H Gfysupljicif (oH r [kw] t;menjicif
 , H Gfysupljicifqbnfn t c&om vlyief; rsm; ulrvlyf
 aqmiElla wmcijzpbñ? , onit *igt pñvt yllf. c& Gfr.
 a-umi h&vlyief vlyaqmi&eft w&lvlt y&om yrm% (oH
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ES/vlyief , H Gfysupljicif onf aq; zuql & m
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 aw& & onf? t b, h-umi h& qllomf ES/vrS aogñ, p&xlvt uH
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 aofy&e&=umr; u) t w&f(zd; m; w&ljri h vmaoma-umi h jzpbñ?
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 w&ljri h paoma-umi h ES/vrSn, p&xlvt onf, muH fsvlt y&om
 t w&f t wmt w&lv rlv&v mu f jzpbay: vmon? ES/v. vlyief
 , H Gfysupljicif uHc, muH & t z&t pñt vlv&f (c, muH f
 w&lv t ygt Oij) (oH [kw] t qly&oly&e&=umrsm; obbmom
 azmi f; um; ae; jcf w&lv t ay: rlvnll ES/v. nmzuf (oH [kw]
 b, zuf t;menjicif [k& c& m; owfsv&xm; on?
 ausnuuyf vlyief , H Gfysupljicif

c, muH fS, yji&ajmi f vly&om t& mOVk; rsm; (meta-
 bolites*) uH ausnuuyf r& p&xlvt ELLjicif [metabolites*]
 jzpbay: yji&ajmi f vly&om (metabolism*) rSx&lyay: vmaom
 rñbnit & mOVk; Pñf; rsm; uH qll [metabolites* [kac: onf,
 (metabolism*] jzpbay: yji&ajmi f vly&om jzpb&of onf
 jzpb&of m; v< w&lv playg; fac: aom rñf jzpbñ? , onf
 j' Apif; rsm; yH, me&sh z& pñf wñ& qm u f ylv&ou& & t' f; rsm;
 toH yE&om t& mOVk; Esh, w&lv quvuf x&f onf x; m; E&f
 aom t qilob& mu& t mi f om ref ajc t ae&sh om ref aog
 & n& funf w&f ajmi f vly&om? Tausnuuyf , H Gfysupljicif
 jcf w&lv "gv& q; rsm; (electrolytes*) uH n f x&f onf x; m; E&f
 p&f r&dy? (electrolytes*] yH& p; m; aom u&e onf t ajc t ae
 w&f rñbnit & mOVk; qll t & n&lv& fays; Oiaom t c; g oH [kvf
 ayg; jpb&om t c; g v&f vly& pñt zll v&f oH [kvf t r" gv& qmi bnf
 t& mOVk; t jzpb&ajmi f vly&om; on? , t& mOVk; rsm; uH electro-
 lytes [kc: onf] \ lv&lv& u& jzpb&om t ajc t ae w&lv aog
 t w&f y , & d m obbmom rsm; vmon? txlojizh qob&f;
 on h yrm% av&sn f vmon? w&gv& H ausnuuyf S qd vD
 ppf xlv& E&f aw& m onf x djzpbñ? (q) vD ro&f; aw& m jcf)?
 t qly&f w&f t & n& d jcf ES& f aog xlv& f ylv&ou& rlyif t m; ylr&f
 jri h v f vnicif w&lv uH v&lv&ou& v&lv&ou& v&lv&ou& v&lv&ou& v&lv&ou&

t qly&f vlyief , H Gfysupljicif
 t qly&f vlyief , H Gfysupljicif w&f aog v&lv&ou&=um
 t w&f & t mu& qd s i w f t m; ylr&f pñ av&sn u& jcf (oH [kw]
 um& E&f H& t mu& qd l w f t m; ylr&f pñ jri h v u& jcf quvuf
 wñ& & e aom t ajc t ae jzpbñ? (um& E&f H& t mu& qd l bnf
 wp& & rsm; t w&f jzpbñ? t qly&f vlyief vlyief w&lv on? um& E&f H&
 a t mu& qd l bnf, muH ft w&f & t & n& Esh w&lv p& & rsm; t-um;
 w&f t u& qd ES& h a p l u h r v a t mi f x&f onf u h a y; on?)
 q? , y&f vlyief

, y&f vlyief onf qly&f rsm; p& e aom * vlyief jzpbñ? , w&lv
 onf t * f y w c k w p d v l y v i f (oH [kw] w c k l w f
 ayg; jpbay: yji&ajmi f vlyief w w l o n ? T t * i g t p y f t y l l f o n f
 om ref jzpbay: yji&ajmi f vlyief vlyief y&lv&ou& Esh q u e f f r & d o m
 p p x k l v f p n f r s m ; u H p p x k l v f & e f t w l v f t x l z p n f x m ; o n ?
 T t * i g t p y f t y l l f o n f , y e f h a o m a - u m i h a o f v n l y w f
 t z e t p n f x b l w l u N l u p p x k l v o n ? , p p x k l v a o m
 t & m O V k ; r s m ; u l a [m r e f [k a c : o n f] a [m r e f o n f , m u H f
 j z p b a y : y j i & a j m i f v l v E s h t j c m ; a o m j z p b o f r s m ; t a y :
 v f r d r & b n e c , m u H f t w l v f r & j z p b v l t y & o m v l
 t y t s u r s m ; t a y : w l v r l w n l l p p x k l v & n f r s m ; p p x k l v a y ; a o m
 , y e f h v i f a y j r s m ; p n & b n ?

(1) yeu& d . , y&f vlyief t pñvt yllf
 yeu& d xlv&f Langerhans qly&f jzpbñ?
 , rS aog xlv&f o-um; "gv& jri h v u& jcf uH w&lv y&e& f t w&lv
 insulin a [m r e f u l l x l v l y l y d i n s u l i n E s h q e l u s i z u f
 v l y a q m i f o n h g l u c a g o n u l l a o f x & b = u m ; " g v f
 av&sn f a p & e f t w l v f x l v l y a y ; o n ?

(2) [l y b l v r w f
 [l y b l v r w o n f v a s o p r e s s i n u l
 p p x k l v a y ; o n ? , o n f a o f v s v a = u m i , l u a v ; r s m ; E s h
 q l e s n f i a o f a = u m r s m ; u l l u s t e f v l a q m f i c i t m ; j z i h
 a o f a y g t e l l j r i h v u a p o n ? x e t j y i f E l n r x l u e E s h
 o m ; t a h , p f t m ; a u m i f v m & e f t w l v f o x y t o c i n
 u l v n f ; p p x k l v a y ; o n ?

(3) oH, lufvif
 yH&f t m; jzih oH \ lufvif onf vnyif. a& t mu f
 zuly&f w&f wñ& b n ? , rS thyroxine uH
 v l t y c s u f r s m ; t & p p x k l v f i c i f / o l a v n i f x m ; j c i f E s h
 v s v x k l v f i c i f r s m ; u l l , v l y a y ; o n ? , o n f q l v r s m ;
 j z p b a y : y j i f a j m i f v l v E e f u l l j r i h v u f a p o n ? t r i o d o t -
 h y r o n i n e u l v n f v s v x k l v a y ; o n ? t c s u , u l
 o H f \ l u h [m r e f r s m ; x l v f x d & m u p n v l y a q m i E l l f a o m
 t o l b , m e & b n h a [m r e f t o l j z i h a w f x i x m ; o n ?
 , a [m r e f (2) c p v l o n f \ H s f a o m t & m O V k t q i l o b &
 a & m u f & e f t w l v f i o d i n e u l v l t y o n ? x e t j y i f
 t h y r o c a l c i t o n i n e u l v n f a o f x & b u , l v q d r f g v f
 j r i h r s m ; r u l l w l v y e & e f t w l v f p p x k l v a y ; o n ? , o n f
 a o f & n f u n x & b u , l v q d , r E s h a z m p z o v i y r m % u l

Medical Dictionary



F as in Failure

Failure is the inability to perform some specified function. It is an insufficiency of an organ leading to a subnormal quantity or quality of its required normal function. Among the most common failures are heart failure, kidney (or renal) failure and respiratory failure.

Heart failure: is a *clinical syndrome** (a sum of signs of any morbid state which occur together) characterized by a set of distinctive symptoms (or signs) the result of disturbances in cardiac output or because of increased venous pressure. Most often it is applied to *myocardial** (pertaining to the myocardium, the middle and thickest layer of the heart wall) incompetence. That occurs when increased pressure distends the ventricle producing a high end-diastolic pressure to a cardiac output inadequate for the body's needs.

The heart failure is classified as right- or left-sided heart failure depending on whether the *systemic** (pertaining to the body as a whole) or pulmonary veins are predominantly distended.

Kidney (or renal) failure: is the inability to a kidney to excrete *metabolites** (any substances resulting from processes called "*metabolism*", some of them having to be excreted. "*Metabolism*" is the collective name for all the processes which change the form and structure of the elements brought to our body in order to produce living organized substance and maintain it.) at normal plasma levels under conditions of normal loading. It may be also the inability to retain *electrolytes** (any substance that dissociates into particles with a negative or positive electric charge when fused or in solution) under conditions of normal intake. In the acute form, it is marked by uremia and usually by a secretion of a diminished amount of urine (oliguria), sometimes by a complete suppression of urinary secretion by the kidneys (anuria or anuresis). We may notice hyperkalemia (abnormal high concentration of potassium in the blood) and pulmonary oedema.

Respiratory failure: is a persistent condition of abnormally low arterial oxygen tension or abnormally high carbon dioxide tension (dioxide carbon = CO₂, it is formed in the tissues and eliminated by the lungs; it assists in maintaining the neutrality of the tissues and fluids of the body.)

G as in Endocrine Glands

The endocrine glands are an aggregation of cells, making up all or part of an organ. Such an organ is specialized to secrete materials not related to its ordinary metabolic needs. It is a ductless organ that release directly into the circulatory system a specific substance called hormone, which influences metabolism and other processes of the body. There are several endocrine glands which release their secretion according to the vital needs; they include:

(a) **the endocrine part of pancreas**, consisting of the islets of Langerhans which produce the hormones insulin in response to a high level of sugar in the blood (hyperglycemia) and glucagon which has an effect opposite to insulin in case of low level of sugar (hypoglycemia).

(b) **the hypothalamus**, secreting vasopressin which raises the blood pressure by stimulation of the contraction of capillaries and arterioles and oxytocin which produces uterine contractions and milk ejections.

(c) **the thyroid gland**, normally located in the front of the neck, at the lower part, which secretes, stores and releases, according to the needs, thyroxin which increases the rate of cell metabolism and triiodothyronine which is thought by some to be the form active of the thyroid hormone. Both of them require iodine for their elaboration. It also secretes thyocalcitonine in response to a too high level of blood calcium (hypercalcemia) which lowers plasma calcium and phosphates levels, inhibits bone resorption and acts



avsmuapayd t \ rjyevnplwi, fuilwm;qbay:on? xetjyif ygmoilf \ lu'vifa [mrlf. tmebil ul qelusion?

(4) ygmoilf, lu'vif

y g & m o d k i f ; \ d G K u f * v i f ; o n f o n f \ lu'vif. ab;zuwuf wn&dy, onf aofx&u, fvqj r'gvavsmuaron;ap&ef twuf aqmi&uay;on?

(5) ylx&dvif

Opaeuf. atmuajcwuf wn&dy ta&euyifESH taemuzyiflylx&[(2)yifc;m;xm;on? taemuzyiflyif&dylylx&dvifonf oxytocin^{ESH} vasopressin ul olavbifxm;on? qd&am*pnfsm;wufqbof; enfap&ef twuf t"u tof, yubuon? xetjyifaov&efcfrsm;wuf aofa-um ulp&eft wuf tof, yuon?

(6) tuf &e, fvifsm;

tuf &e, fvifsm;onf ausmulyf. tay:zuqf wufwn&bn?, wbnirwhomtpvityif (2)ckaygf pycifrsjzpay:vmon?, t p v f t y i f (2) c k f n (cortex) tjyif zuylifESH (medulla) twufyifwzpon?, tuf &e, i *vif tjyifzuyifonf guco corticoid (*vulftopfrsm; xyfz zc&xlwlyEil&ef, yvlyay;aom a [mrlf) mineral cortocoids (qll) r x e f o f r E S h y h v u q d r f q \ h t a y : t u s l o u h a m u f . & b o m a [m r l f) a n d r o g e n s (a , m u s n ; a [m r l f) E S h p r o g e s t i n s (y \ u p w i a [m r l f) w l u l \ h s f a o m t q i o l e a m u a t m i f a j y m i f v a y ; o n ? t u f & e , f v i f . t w e f y i f o n f e p i n e p h r i n e (t u l y e , e v i f) E S h n o r - e p i n e p h r i n e (a e n f t u l y e , e v i f) u l p p x l v a y ; o n ?

(7) yb, fvif

ybe, fvifonf melatonin aygfpyzpay:jcifESH xlwlvjcfiul, yvlyay;on? c, mul xlwli, a [mrlf. vlyaqmifzulduRjzpbolult wnlwusaocsnphazmjyxm; jcif r&dy? melatonin pp&lvfonfaemf ufybe, evifESH qupyvsa&bn? jrivotvufckjvfrsm;ultvifa&mitSaph aqmabom t cg melatonin xlwlvsvf_ avsmuaron;on?

(8) vifvif (of r [lv) vift *j

(tr&om;rsn;wuf aO&apESH tr&or&rsn;wuf om;O t d)

aO&aplonf ta&t)uqjzponha, musn; a [mrlf (testosterone) ul txlzpnfxm;aom qvfrsm;um;rs wqih xlwlvsvay;on? tr&ay; t *igt povft yifwck jzponhom;O t d f s t u p x \ h s i f t u p x \ l u l w m (e s t r a d i o l) E S h e s t r i o l w l u l x l w a y ; o n ? , a e m w u f o m ; O v n f j z p a y : o n ? t j c m ; a [m r l f ; w r s j z p o n h y \ u p w m \ l e f u l c o r p u s l u t e u m (o m ; O t d f . t O g a m i l u l b n f [l v n f a c : o n) r s v s v k l v a y ; o n ? c o r p u s l u t e u m o n f o m ; O t d f s t u v i , l u a v ; & i f r a f o m ; O v s v x l w l y f a e m u f i f w u f j z p a y : v m o n ? t u , f u l D e f a q m i f t z p o n h a m u l f y g u c o r p u s l u t e u m . t & g f t p m ; o n f u d x o n ; v m y d v a y g f r s m ; p h t x d q u l v u f w n & b n ? t u , f u l D e f a q m i f y g u c o r -

pus luteum onf u s a y s m u l g b n ; o n ? (9) olfrwfvif

olfrwfvifonft ylxmDipwftjribjduDrn; z; on? , aemulyif y w j z n f j z n f j y e v n l i , b n ; o n ? o l f r w f v i f r s t h y m o p o i e t i n E S h t h y m o s i n w l u l x l w l v s v a y ; o n ? , o n f T - l y m p h o c y t e s x l w l y f a ; E S h u d x o n ; z r _ t w u f x e f n , d y ; o n ? (l y m p h o c y t e s o n f a o f , z O v r d j z p y d T - l y m p h o c y t e s E S h B - l y m p h o c y t e s [l l E p r f c b c m ; o n ? , u l h o f j y e n E S h v i h v p o t ; w l w l f a w a o n ?)

(Z) a&, lf

rsn;aomt mjzihT tac:tao:ul/Herpes simplex (ol [lv) Herpes zoster Eprhvt wuf tof, yuon? rnbnta&m*gvf r q h t a&jym;a&mi&r fonb&m*gvft zli, f u a v ; r s n ; t p k l u l j z p a y : v m o n h v Q % m j z i h a w a o n ? Herpes All f & y p h a u m i h j z p l y f r ; o n ? , o n f u d r m ; a o m D N A All f y p j z p l y d w d e m e f t r s m ; p l w l f a w a o n ?

Herpes simplex

vvlwv m j z p h o m a m * g t l y p k l v f y d i f y d Herpes All f & y p f t r d t p m ; - (1) E S (2) a - u m i f j z p l y f r ; o n ? , All f & y p f (2) r d p v l o n f t a a j y m ; a y : w l v n f a u m i f / t a j r , y g a y : w l v n f a u m i f a t m u a j c w u f e y d t e n f i , j r i h v u l m t & n j z i y n h a e a o m t z l i , l u a v ; w v l o l [l v i w v l x u i y l a y : v m o n ? Herpes simplex onf y x r O p q h t j u d f a m * g u l o i f a a m u l j z p l y f r ; w w b u l o l a m * g u l v e f , r y a e m r s n f j y e v n f j z p l y f r ; w w b o n ?

- tr&t p m ; (1) onf a, bl, st; mjzih v d f t * f a e m r s t y t j c m ; a o m a e m r s n ; w u f j z p l y f r ; w w b o n ?

- tr&t p m ; (2) onf v d f t * f e s h y w D e f u s i w o l u l w l f a m * g j z p l y f r ; o n u l l a w a o n ?

a&, l e f t z l u a v ; r s n ; j z p l y f r ; w u f r w h a o m t c s u f a y g f r s m ; p h y d i o n ? , w l e h - t z s n ; w u j c i f / a t ; a o m a e m r s n ; (o l [l v) c a r f v e h a m i j c n l w l e s h x d w e i f / a e y a v m i f j c i f / p v h o m u a a m u j c i f / & m o b o f a y : j c i f p o n l w l z p o n ? Herpes Zoster (zona [lv n f a c : o n)

w l f , r y a e a o m v a r i c e l l a - z o s t e r A l l f & y p l y f r s j y e v n f j z p l y f r ; j c i f j z p o n ? a a u s m u j z p a o n h t v e l u l p u v g f a o m a m * g l a - u m i f j z p o n ? u a v ; r s n ; w u f t j z p r s m ; o n ? Herpes zoster onf a a u s m u h a m * g j z p l y f r ; y b a e m u f u l c h p e f t m ; r s w e l f y e r a - u m i f j z p o n f [k , l u n f

X m p o n f O i h a m u l p u b n f t m \ u m v a v h u f w l t z l i , l u a v ; r s n ; t p k l u l f , y l u l j z p a y : v m y d e m a b - u m v a v h u f t v e l u l e m u s i j c i f v O % m r s n ; a w a o n ? r s n ; a o m t m j z i h u l t , m . w z u l w n f w l j z p l w b o n ? (r a E v i f & i b w E S h O r f A l u f w j c r f w n f w l j z p l c i f / a j c w z u f o l [l v i v u l w z u l w n f w l j z p l c i f) j y e v n r & o m a e m w l f t q u l r y w f e m u s i j c i f j z p a y : v m y g u a e m u c u l v a m * g j z p a y : v m E l o n ?

t v e l y i f x e h o m a m * j z p o n h r s u p a e , l e w l f y , r a j r m u f O p e s t e m h e u m (t r i g e m i n a l n e r v e) . r u p d z u l f y g i o n f , t m \ h u m w a v h u l w l f t a a j y m ; u l f r s m ; a y :

v n i c i f / r u b r , a m i f i E l u w g v h t r u l u n h m i e r j c i f v O % m r s n ; u l a w a o n w w b o n ? , a m * g j z p l y f r ; a o m r u p o n f t , & m , & b n ?





as an effect opposite parathyroid hormone.

(d) the parathyroid glands, situated beside the thyroid gland, acts as an antihypocalcemic.

(e) the pituitary gland, or hypophysis, located at the base of the brain, divided in anterior pituitary and posterior pituitary; posterior pituitary stores oxytocin and vasopressin and used mainly as an antidiuretic in the treatment of diabetes insipidus and to produce vasoconstriction in the presence of hemorrhage.

(f) the adrenal glands, are situated at the superior pole of each kidney. They are the result of fusion of two different parts, the cortex and the medulla. The adrenal cortex elaborates gluco and mineral corticoids, androgens and progestins. The adrenal medulla secretes epinephrine (adrenaline) and norepinephrine.

(g) the pineal body, synthesizes and releases melatonin, whose hormonal function is not firmly established in human physiology. Melatonin secretion is related to norepinephrine whose rate of release declines when light activates retinal receptors.

(h) the sexual glands or gonads (testes for male and ovary for female), testes secretes, through specialized interstitial cells, the most important androgenic hormone called testosterone. Ovary, the female gonad, in which the ova are formed, secretes estrone (folliculin), estradiol and estriol. Another hormone, progesterone, is liberated by the corpus luteum (called also yellow body of ovary). Corpus luteum is formed by an ovarian follicle that has matured and discharged its ovum; if the ovum has been impregnation has not taken place, the corpus luetim degenerates and shrinks.

(i) the thymus reaches its maximal development at about puberty and then, undergoes a gradual process of involution. It produces thymopoietin and thymosin which regulate the production and the maturation of the T lymphocytes (Lymphocytes are white cells found in the blood, lymph and lymphoid tissues, they are divided in two classes *B-* and *T-lymphocytes*.)

H as in Herpes

Usually, this term is used referring to either Herpes simplex or Herpes zoster. In any cases, it is an inflammatory skin disease characterized by the formation of clusters of small vesicles. The causative agents are Herpesviruses, a large group of DNA viruses found in many animal species.

Herpes simplex: involves the acute infections caused by herpes simplex virus Type-I or Type-II. Both viruses develop, on the skin or mucous membrane, one or more small fluid-filled vesicles with a raised erythematous base. Herpes simplex occurs as a primary infection or recurring by reactivation of a latent infection.

- Type-I infections generally involve nongenital regions of the body.

- Type-II infections are usually seen on the genital and surrounding areas.

Various factors, including fever, exposure to cold temperature or to ultra-violet rays, sunburn, emotional stress, menstruation etc., may precipitate the outbreak of herpetic vesicles.

Herpes zoster: (called also Zona) is a particular form representing an activation of latent varicella-zoster virus, causative agent of a highly contagious disease called chicken-pox usually affecting children. Herpes zoster is believed to be an immune response after a previous attack of chicken-pox.

This disease is characterized by crops of clustered vesicles along the course of an affected nerve with severe neuralgic pain. It is usually unilateral (one side of the face, chest or abdomen, one arm or one leg). Persisting pains in the area of distribution may be a complication.

A particular severe form called ophthalmic herpes zoster involves the ophthalmic division of the trigeminal nerve pertaining to the fifth cranial nerve. It is characterized by a cutaneous rash along the nerve path, preceded by a lancinating pain in the area and accompanied by conjunctivitis, and sometimes by keratitis. It endangers the affected eye.

U

How About Worms?



A worm is any numerous long-slender, soft-bodied, without a backbone, and legless animals. Fortunately, all of them are not human parasites but a great number getting through the human body (and some developing into various organs) create disorders more or less serious, a few life-threatening. Scientists call "Helminths" the whole human parasitic worms and "Helminthiasis" diseases caused by all kinds of parasitic worms. There is a world geographical distribution of these diseases. Simplifying, in this article, will be only treated the helminthiasis, which are found in the South East Asia, particularly in Thailand and the borderline. Being more specific about the aim concerning the health of all communities, the prevention of these diseases will be the main subject.

Helminthic Diseases Prevention

1. Filariasis

Lymphatic filariasis

Wuchereria bancrofti, Brugia malayi

2. Soil-transmitted helminthiasis

Pinworms (*Enterobius vermicularis*) and whipworms (*Trichuris trichiura*)

Roundworms (*Ascaris*)

Hookworms (*Ancylostoma*) and *Strongyloides stercoralis*

3. Schistosomiasis

Schistosoma japonicum, *Schistosoma mekongi*, *Schistosoma mansoni*

4. Diseases caused by flukes

(fluke = worm which are comparatively large fleshy parasites living in the biliary tract, intestinal canal or lung)

(a) **Liver flukes:** *Fasciola hepatica*, *Clonorchis sinensis*, and *Opisthorchis viverrini*++ in Northeastern Thailand

(b) **Intestinal flukes:** *Fasciopsis buski*, *Heterophyes heterophyes*, *Echinostoma*

5. Diseases caused by tapeworms (Cestodes)

Beef tapeworm (*Taenia saginata*), pork tapeworm (*Taenia solium*), *Hymenolepis nana*, Larval stage (*Cysticercus*) of *Taenia*, Larval stage

(Hydatid) of *Echinococcus granulosus* (a very small tapeworm of the dog) and *Echinococcus multilocularis*, second larval stage (*Spargana*) of *Sirometra mansoni*

6. Diseases caused by unusual parasites

Gnathostoma spinigerum (common) and *hispidum* (rare), *Angiostrongylus cantonensis*, *Hyperodoraemum*, *Prosthodendrium molenkampi*++ in the rice fields in Thailand, *Plagiorchis*

Because of certain parasites or habits, these parasites may occasionally infect man through the eating of uncooked and marinated tadpoles, frogs, snakes, snails, slugs, crabs, dragonfly nymph and sea fish for medical purposes or as food.

Control

1. Filariasis:

We have to make a distinction between prophylaxis and control of endemic filariasis in areas where reduction in the microfilaria level and adult filaria number could be obtained. Regarding the prophylaxis with Diethylcarbamazine (D.E.C.), it has not generally been successful. Nevertheless, 200 mg twice daily for three days every month or 100 mg once a week has been suggested but, to be effective, this form of prophylaxis should be extended to large areas. On the other hand, control of endemic filariasis by mass chemotherapy using D.E.C. could be successful provided that it was combined with vector control and personal prophylaxis. The whole population must be treated because no possibility to identify all the microfilaria carriers. But we must know carriers may have severe reactions particularly in Malayan filariasis cases.

Proceedings about endemic filariasis control: A program of control must use combined methods:

(a) **Mass chemotherapy with D.E.C.:** depending on the cooperation often obtained with difficulty, of the entire population, it rests on the use of Diethylcarbamamide, a chemical agent capable of killing microfilaria and adult form im-

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(u) D.E.C. mass chemotherapy.

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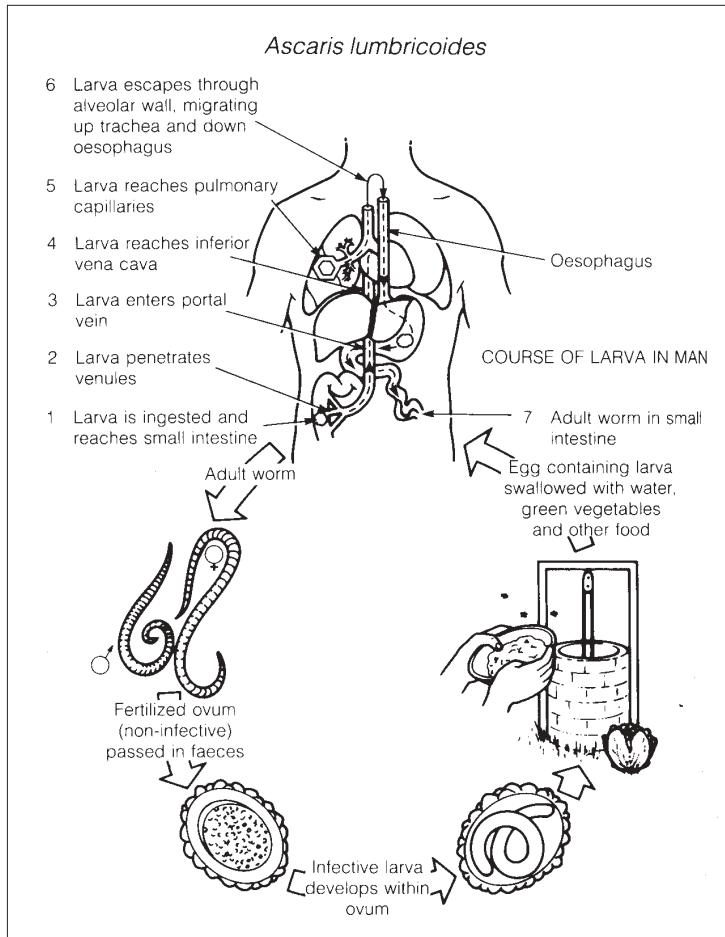
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mediately. We must conform to each national protocol. Usually, in adults, weekly spaced doses of 100 mg are given with great effect; they are better accepted than intensive courses. Another course of treatment is: 6 mg/kg once a month for 12 months or cooking salt medicated with D.E.C. in a strength corresponding to a daily intake of 50 mg. To improve the decrease in the level of blood microfilaria a dose of 2.5 mg/kg of Levamisole may be given before the first dose of D.E.C. in all kinds of treatment, we cannot avoid reactions, commoner and more severe in Malayan filariasis and microfilariasis and microfilaria carriers; large proportion of the population suffers general reactions - headache with or without fever and anorexia - and local reactions - painful lymph nodes, retrograde lymphangitis and, in a few cases, abscesses. In some cases, abdominal pain, urticaria and asthmatic attacks are seen. Because of these reactions, above all in the control of Malayan filariasis, the mass treatment with D.E.C. has sometimes had to be suspended.

(b) Vector Control: Action of vector control is slow regarding the prevalence of filariasis in endemic areas. The main causes are:

- the long life of the adult worms requiring many years to reduce the number and longevity of the vectors,
- the insecticide resistance and diversity of the relations of the three general groups of vectors:



Anopheles, Aedes, and Culex to their environment. Control of adult Anopheles and Aedes may be undertaken by house or aerial spraying and fogging and controlling of the breeding places by improving hygiene village; control of Culex has failed because of development of D.D.T. resistance. Larval control campaigns have been quite effective.

(c) Personal prophylaxis: In nocturnally periodic Bancroftian filariasis, mosquitoes bite at night so that sleeping under a mosquito net or in a room with screens provides an effective protection.

2. Soil-transmitted worm diseases:

Control measures must combine mass treatment, health education and basic measures of hygiene.

(a) Mass treatment: may be very successful reducing the worm loads. In practice, a selective target is the younger children which allows the reduction of the dose frequency; at the beginning: a single dose of Albendazole 400 mg or Mebendazole 500 mg or Pyrantel 10 mg/kg body weight three times a year. As soon as the prevalence decreases the same single dose is administered only once a year.

(b) Health education: should be explained clearly and based on what the concerned population needs to know.



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Soil-transmitted worms



A. Generalities:

Regarding to their life cycle, the soil-transmitted worms (intestinal nematodes) may be divided in three groups.

(1) **The first group** includes worms whose eggs do not require a period of development in the soil. Its eggs are carried from the anal margin to the mouth and either do not reach the soil or, if they do, they do not undergo any modifications such as pinworms (*Enterobius vermicularis*) and whipworms (*Trichuris trichiura*).

(2) **The second group** includes worms whose eggs require a period of development in the soil after they are discharged in the stool, such as roundworms (*Ascaris lumbricoides* and *Toxocara canis*).

(3) **The third group** includes worms whose eggs undergo some modifications after having been discharged in the stool; then, they are ready to penetrate the skin. But, autoinfection can occur with some of them (*Strongyloides*). This group includes hookworms (*Ancylostoma*) and *Strongyloides stercoralis*.

In this issue, only the second group will be treated and particularly, *Ascaris lumbricoides*.

B. Roundworms:

Type *Ascaris Lumbricoides*

Life-cycle

Ascaris lumbricoides is one of the commonest and most widespread intestinal nematodes infecting many populations. It is highly prevalent in South East Asia. In humid areas, in damp soil, at the optimum of 25° C, eggs develop in three weeks undergoing a moult before being hatched, when the egg is swallowed, in the small intestine of a man. When adult, *Ascaris* is comparatively large worm, up to 35 cm, female a little bigger and longer than male. It inhabits the small intestine where female lays eggs. Eggs are passed out as immature ova undergoing a first moult in the soil, then, if swallowed, hatch as an infective second stage, in the form of an independent, motile, rod-shaped larva (the rhabditiform larva). From here, the larva pen-

etrates the mucous membrane of the small intestine, enters the bloodstream reaching the lungs via the right heart. As it cannot pass through the lung capillaries, it goes through the alveolar wall so that it enters the respiratory tract. It goes up to the larynx, passes over the epiglottis and enters the esophagus to reach a second time the small intestine. The period from infection to the first passage of eggs in the stool is from 60 to 70 days. During this period, larva moults four times, the fourth moult taking place between the twenty-fifth and the twenty-ninth day.

Transmission

People, more often children playing around the house located in suitable area with damp soil, are usually contaminated swallowing eggs.

Pathology

Two causes:

(1) Migrating larvae:

- cause symptom

(a) from the reactions their physical presence induces during the migration,

(b) from the immune reactions they induce.

(a) By the physical presence of larvae

Migrating larvae bring about damage to the lungs: patients present -

- radiological pulmonary infiltration

- eosinophilia: abnormally large numbers of a kind of white cells in the blood; these particular white cells, called eosinophilic leukocyte, are easily stained by eosin.

- fever

- cough

- sputum

- asthma

Fourth stage larvae can be seen in the bronchioles.

In other organs we may find small areas of necrosis in the liver.

Larvae may wander into the brain, eye or retina.

(b) Immune effects

Conjunctivitis, urticaria and asthma are immune reactions that can be very intensive.



(2) **Adult worms:** cause little pathology by themselves. Nevertheless aggregate worms can cause volvulus (intestinal obstruction due to a knotting and twisting of the bowel) intestinal obstruction by blockage and intussusception (the prolapsed of one part of the intestine into the lumen of an immediately adjoining part). Rarely, when *Ascaris* reach abnormal situations, may be seen perforation of the bowel in the ileocecal region, blocking of the ampulla of Vater with pancreatic necrosis, liver abscess. In all cases *Ascaris* may contribute to protein energy malnutrition, to Vitamin-A deficiency and can also affect normal growth of children.

Immunity

Man acquires only partial immunity to reinfection. The main immune reaction is humoral and directed against the migrating larval stage.

Diagnosis

Diagnosis is easy either from the passage of adult worms in the stool or by finding eggs in the stool.

Hypereosinophilia is unreliable.

Differential diagnosis

The pulmonary syndrome and hypereosinophilia are common to a lot of helminthic and other origin infections essentially:

Toxocara canis, often associated with *Ascariis*,

Hookworms (*ankylostoma*)

Schistosomiasis and Tropical pulmonary eosinophilia.

Medical treatment is effective only against the adult worms.

We have at our disposal three drugs:

Mebendazole

- a single dose = 500 mg adults and children over 2 years

Pyrantel

- a single dose of 10 mg/kg

Levamisole

- a single dose of 2.5 mg/kg

Treatment of complications: If time permits it is wise to treat ascariasis before any elective surgery, particularly abdominal surgery. Intestinal obstruction may often resolve with medical treatment. U



Impacted mass of adult *Ascaris* worms in the small intestine causing fatal intestinal obstruction.

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 z o n f x m; o n f a o f & n f u n b n f a o f t wēf y p n f r s r; u l l
 o, h q m i h a y; j c i f t w l u f u m; c h p n f w c y r m t v l y l y f o n f
 a & w d f t y l u k e f n, d k m a y; & e f j r i l m; a o m p e f t i i v c k & b n f
 a o f u, t w d f t y t e l u l l t e n f i, h a j m i f v l l h z i h y i f
 Z d j z p l y s u f j z p l a y; v m y d t y l t a j r m u f t r s r; x l u f m a p E l l b n f
 a o f & n f u n l u t y l u l l p l y f, b x m; E l l h y d w p b e; r s r; t w d f
 j y e f e h a p o n f t a & t w l u r s r; a o m o u & E s h o u f r h
 y p n f r s r; o n f a o f & n f u n f t w d f a y s n d i h a p o n f t " l u
 a y g i p y f y f i h a o m t & m o n f a o f & n f u n f y l l h v e f j z p l o n f
 a o f & n f u n f t w d f t j c m; u s e & h e a o m t & m r s r; o n f " g v f
 q m; r s r; (electrolytes) j z p f u o n f, w l e s n
 q l l d r u v l l h f (t i f b l q m; / b i l u m A e e u f y l w u u q d) r f
 u, l v q d r E s h t j c m; a o m " g v f q m; r s r; j z p f u o n f
 a o f & n f u n f & m c l l E e f t e n f i, l u l l * v l u p f t o m; " g v f s
 & & h o m o * e p f t u l q p f o l e [l v f t r i l l E l l u q p f a & w d f
 r a y s n d i E l l h a o m t q d (lipid) / A d v m r i f a c: o u h a p m i f g v f r s r;
 p e f e x l y p n f r s r; Z d a j y m i f v f r a u m i h j z p l a y; v m a o m
 a b; x l u y p n f (creatinine) a o f e d a & m i t s, l y p n f
 , y u f s u p d l x l u h a y; v m a o m t a o g a m i a & m i t s, l y p n f
 (bilirubin) E s h, & d, m; u l o h a o m
 E l l u x \ h s i e b k y p l y p n f r s r; / y u f y, b e r; a o m " g v f a i e s r;
 (a t m u p d s i E s h u m A e f h h a t m u q l l) E s h a [m i r e f " g v f r s r;
 p o n i w l e z i h a e & m, b x m; u o n f a o f & n f u n l w d f
 y l l h v e f t l y b k (3) p e b n f, w l e h t, l v A s t r i f (albumin)
 * v l A s t v i f (globulin) E s h z l u b & e l l s i f (fibrinogen) w l e

j z p f u o n f
 a o f & n f u n l y l l h v e f. v l y i e f v l y h a q m i f u r s r; r h
 a t m u l y g t w l l j z p f u o n f

- a o f E s l u v y p n f r s r; t u m; & d t & n f r s r; t u m;
 w z u p t i z d t m; v r f a p m u l l w n h a q m u h a y; o n f

- p h a j y m i f v f t w l u f v l y h a q m i h a y; E l l p e f & b n f

- a o f. t y p f t u s w d f y o f i v l y h a q m i b n f

- u l l u p a w m (cholesterol) /

o l l f \ l u h [m i r e f (thyroid hormone) E s h p e n i c i l l i n
 w l e u l y h a q m i & e f t w l u f u m; c h

v l y h a q m i h a y; a o m t & m t j z p f a q m i & l u h a y; o n f

- a o f t j z p p o l v e f y o f i v l y h a q m i h a y; o n f

- c, m u l l i q m; " g v f r s r; u l l n d f & d t m i f x e f n, d
 v l y h a q m i h a y; o n f

- g m m a g b u l i n s y l l h v e f o n f c, m u l l f c k l u m
 u ġ h a & p e p l v l y e f t w l u f t a & y g p n f t i f d E l l v l A s t v i l (im-
 m u n o g b u l i n) (y, g p n f y l l h v e f r s r; - a n t i b o d i e s)
 j z p f u o n f

2? u v y p n f j' A p i f r s r;
 u v y p n f j' A p i f r s r; w d f a t m u l y g w l e y o f i f u o n f

(u) a o f e d r s r; (Erythrocytes) -
 a o f e d r s r; (RBC - Red Blood Cor-
 puscles)

(c) a o f c y f y m; r s r; (platelets) -
 a o d, r m (Thrombocytes)

(*) a o f, z o r s r; (Leukocytes) -
 a o f, z o r s r; (WBC - White Blood Cor-
 puscles)

(1) E s u v d y f t r d r d y g o m a o f, z o r s r;
 (polymorphonuclear granulo-
 cytes)

- a o f x w d f t r s r; q h w h a o m E s x \ h z; a o f, z o r s r;
 (Neutrophils)

- t d h j i E l l z; a o f, z o r s r; (Eosinophil)

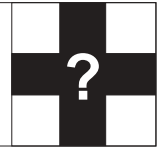
- a b o h z; a o f, z o r s r; (Basophils)

(2) E s u v d y l v c b m y g a o m a o f, z o r s r;
 (Mononuclear granulocytes)

- a o f, z o c k h e p t w d f y o f i h a o m a o f, z o r s r;
 (Lymphocytes)

- r l l h j l l a o f, z o r s r; (Monocytes)

Blood



The blood represents about 8% of the body weight has an average volume of 5 liters in the women and 5.5 liters in men. The constant movement of blood as it flow through the blood vessels keep its cellular elements rather evenly dispersed within the plasma. If a sample of whole blood is placed in a test tube and treated to prevent clotting, the heavier cellular elements slowly settle to the bottom and lighter plasma rises to the top.

The white blood cells and platelets, which are colorless, are packed in the thin cream layer on top of the red cell column.

Blood consists of two portions:

1. Plasma
2. Cellular elements

1. Plasma being a liquid is composed of high percentage of water, which serves as a medium for materials being carried in the blood. Water has a high capacity to hold heat, plasma is able to absorb and distribute much of heat generated metabolically within tissues with only small changes in the temperature of the blood itself. A large number of organic and inorganic substances are dissolved in plasma. Major constituent is plasma protein. The rest is electrolytes (ions) such as sodium, chlorides (common salt), bicarbonates, potassium, calcium and others. The small percentage of plasma is occupied by nutrients such as glucose, amino acid, lipid and vitamins and waste products, (creatinine, bilirubin and nitrogenous substances such as urea) dissolved gases, [oxygen (O₂) and carbondioxide (CO₂)] and hormones. There are three groups of plasma proteins: albumin, globulin and fibrinogen.

Functions of plasma proteins are:

- establish osmotic gradient between blood and interstitial fluid
- capacity for buffer changes in pH
- contribute in blood viscosity
- transport media for cholesterol, thyroid hormone and penicillin
- involved in blood clotting process
- regulation of salt balance of body
- gammaglobulins are immunoglobulin (antibodies) for body defense mechanism

2. Cellular elements consists of:

- A. Erythrocytes - Red Blood Corpuscles (RBC)
- B. Platelets - Thrombocytes
- C. Leukocytes - White Blood Corpuscles (WBC)
 - (a) Polymorphonuclear granulocytes
 - Neutrophils
 - Eosinophils
 - Basophils
 - (b) Mononuclear agranulocytes
 - Lymphocytes
 - Monocytes

A. Erythrocytes (RBC): flat disc-shaped cells with biconcave surface and contain organelles or ribozomes. It contains no nucleus. The red color of the cells is due to Hemoglobin. Oxygen is carried in the blood bound Hemoglobin; and because of its iron content it appears reddish in color when combined with oxygen and bluish when deoxygenated. Thus, fully oxygenated arterial blood is red in color and venous blood that has lost some of its oxygen load at the tissue has a bluish coat. Each of us has a total of 25-30 trillion RBC through our blood vessels.



(u) aofeDrsm;

Eþeuc&rsuEþiyi&ðom tjym;yl&bnhuvyþnf rsm;jzpyþð , wðf organelles oþ [luf uvyþnft wðf tom;"gvf xlvvlyþy;aom t*ij , fsm; (ribozomes) ygð on? xð ribozomes rsm;wðf Eduvd ryðþy qvfrsm; t eða&miþþ&jciþfrñ a&mits, þPnf a [rñvbi (Haemoglobin) a=umijþþon? a tmupþsi lkaof&xlvvfa&mits, f yPnf a [rñvbi f t uet towft m;jiþ (HAemoglobin &ðavmu) o , ðqmiþay:on? t b , ð=umitqðomf a [rñvbi of gvyþif onfatmupþsi Eþaygþpyþom t cg t eða&miþþay:vmjyð a tmupþsi ryðþom t cg tjym a&miþþay:on? xð=umihatmupþsi tjynht 0 ygðom aofvðv&umt wðf&ð aofrsm;onf t eða&miþþyð aofþef a=um&ð aofrsm;wðf a tmupþsi yþif yrm% avsnenfoþ; ojzihwþþ;wðf(aof&um) tay; ð&mitþn tjymjþon? uElylv&wðcsifþvðf uElylv& aof&umrsm; wavþhuwðf aofð þnyj 25, 000, 000, 000, 000 -30, 000, 000, 000, 000 (25-30 trillion) xðþn? aofeð oulvrfñ &uþyþj (120) jzþon? &ðwðf cðqð (Bone marrow) onf yþ&ft m;jihaofeð topfrsm;uð xlvvlyf on? wpUeðvð 2oef rS 3oef t xð xlvvlyf on? aofeð xlvvlyf avsnenfuqþjciþon aof t m;enþjciþ (Anaemia) jzþyð aofeð tyþþnþjciþuð (Polycythemia) [ðc:on? aof t m;enþjciþ jzþapaom ta=umitþ&ifrsm;rñ aof tvðþriþ qð , þciþ/ tm [m&ctvþjciþ/ aofeð xlvvlyf avsnenþjciþwðjzþon?

aof (1) rðvðvðmwðf pþayþj aofeð (Erythrocytes) ta&twðfñ 5, 000, 000, 000 &ðn?

] 500,000/mm³

&ilusuðvmaom touyþf wðf &i! ðeðv ausm&ð qþrsm;/ eðrsm;/ Oþacgfcðð a tmuhþcES h t &ð&frsm; . tay:buft þeþyfrsm; aofeDrsm;xlvvlyþy;&ðmru aof, z0 (leub-cyte) Eþhaofcyþym; (Þatekt) wð t uðqð t&iftjrpvñf jzþon?

(c) aofcyþym;

aofcyþym; - (aofeDrsm;)onf&ðwðf cðqð t wðf y awðom meþþryocytes rðjifouðvmonhqvft yþf tpuav;rsm; jzþuon? , wðvðf Eduvd ryðþy 4if wðþþeþt i Eþhþpðxlvvlyþnfrsm;uð xlvvlyþy;on? xð yPnfrsm;rSjriþrsm;aom uðþþeþt m;uþy;on? xð=umih a o G; c J a p a o m u , w G i f y g o i f o n f ? (hemostasis*)(aofcþiþ-blood coagulation)wðf t "u taetxm;u vyðñ; aqmið&uþayon? , ðunf vutðkm;cuft & aofcyþym; wð oulvrfñ (10)&uðf &u(20)ceð&ðn?

- aof (1) rðvðvðmwðf pþayþj aofcyþym; (Platelets) ta&twðfñ 250, 000, 000 &ðn?

] 250,000/mm³

(*) aofzlo

aof, z0onf trñþjif t"ðm, þy:aeþð , wð onf ta&mitqif uifrþuon? , wðvðf cðkumuð fa&; þeþf vlyf eþðf &ðn? (c, muð lððab;Oyð þy;Eððom a&m*gyþrsm;uðsuþþjciþ - omrefsupþjziþriEððom a&m*g jzþyð;aponhbuðvðð, m;/ Aðf&yþf þonlvðð Ogrþciþ t m;jiþzsupðon?)

aof, z0rsm;. yiuð rðifñ t eða&miþ \ ðwðf cðqð xð&ðcþm;yþjzwl r&aom yþnqþvfrsm;t cðþS jzþon? aof, z0 trðtþm; (5) rð&ðn? , wðt xðfS(3) rðonf obm0 t m;jiþ Eduvd yf trðrlyþom aof, z0rsm; (polymorphonuclear granulocytes) jzþuon? , wðrñ Neutrophils, Eosinophils EþBasophils wðjzþuon? u&ðeaom(2)rðrñ Eduvd wðbmyþom aof, z0rsm; (Mononuclear granulocytes) jzþom Lymphocytes EþMonocytes wðjzþuon?

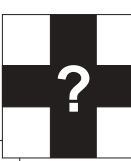
Neutrophils rsm;onf obm0 t m;jiþbuðvð &ð, m;Eþhþyþyþnfrsm;uð OgrþzsuþqðEðon? , . ta&twðf wðrsm;vmþiþonbuðvðð, m; a&m*gyð a=umih jzþon?

Eosinophils rsm;onf aof, z0 t jcm;wðjzþon? oðumih&m*gyðEþhaofrwnþapaom "gvðvðþeþer_tajc taersm;wðf aofwðf y , . yrm%uð a&wðvðunþy wðrsm;aeonlvðwðf iEðon?

Basophils rsm;onf c, muð f t Eþt jym;&ð wð lquf wþþ; rsm;xlvvlyþeþeþon? ta&twðf t m;jiþ tenf qð jzþon? Basophils rsm;onf aof rS yPnf wclð rwnñ "gvðvðþeþeþom t cg aofvððom t cg xlvvlyþom [þþwmiþ"gvð (Histamine) Eþhaofrcþapaom t medoiþ &ðnþgvð (Heparin) wðuð xlvvlyþon? , wðonf þeþt m;tjynh &ðom "gvlyþnfrsm; jzþuon? , wðuðoiþwðom t ajc t aewðf t vðt avsmuþeþt m;jiþ xlvvlyþy;Eðon? Histamine onf c, muð rS aofrwnñ "gvðvðþeþeþiþwðf ta&;uððom yPnf jzþon? Heparin onf aofwðf rS t qðt yþf t pav;rsm;uð z, ðñ;ay;\ ðmru aofcþiþuðvñf umuð þy;on?

aof, z0cðþeþvðf yððom viziþþaof, z0 (Lymphocytes) (2) rð&ðn? , wðrñ B-Lymphocytes EþT-Lymphocytes wðjzþuon?

B-Lymphocytes rsm;rS a&m*gyðwðuð cðkvluzsuEðf þeþf &ðnþy, þPnf yð ðvðfrsm;uð xlvvlyþon? t jcm;wzuf



Life span of RBC is 120 days. Bone marrow normally generates new RBC, a process known as erythropoiesis at a rate of 2-3 million per second. Reduction of RBC is Anaemia and excess formation is called Polycythemia.

Causes of Anaemia may be due to excessive blood loss, nutrition deficiency, or failure to produce RBC.

Total erythrocytes count per milliliter of blood is 5,000,000,000.

$$= 5,000,000/\text{mm}^3$$

After maturity bone marrow of sternum, vertebrae, ribs, base of the skull and upper ends of the long limb bones not only produce red cells but also is the ultimate source for leukocytes and platelets as well.

B. Platelets: (Thrombocytes) are cell fragments derived from megakaryocytes. They are lack of nuclei and they generate energy and secretory products, which give high power of contractility that they play a role in hemostasis* (blood coagulation). Life span believed to be about 10-20 days.

Total platelets count per milliliter of blood is 250,000,000

$$= 250,000/\text{mm}^3$$

C. Leukocytes (WBC): as the name implies, they are colorless. They have defensive mechanism [destroying pathogens* (disease-causing microorganisms such as bacteria, viruses by phagocytizing *)].

Origin of the white cells is from some undifferentiated stem cells in red bone marrow that give rise to RBC and platelets. There are five different types of leukocytes, three of them are polymorphonuclear granulocytes in nature and they are Neutrophils, Eosinophils and Basophils. The rest of the two are mononuclear agranulocytes cells such as Lymphocytes and Monocytes.

Neutrophils are phagocytic in nature: increase in amount is due to bacteria infection.

Eosinophils are another type of granu-

locyte. Worm infection and allergic conditions may show increase amount of eosinophils in circulating blood.

Basophils are least numerous disperse in the connective tissue throughout the body. Basophils produce histamine and heparin, which are powerful chemical substances that can be released by appropriate stimulation. Histamine is important in allergic reactions. Heparin not only removes fat particles from the blood following fatty meal but also can prevent blood clotting.

Monocytes like neutrophil have phagocytic effect.

Lymphocytes have two types: B-lymphocytes and T-lymphocytes. B-lymphocytes produce antibodies whereas T-lymphocytes do not produce antibodies. They destroy their specific target cells. Uncontrolled proliferation of WBC is called Leukemia.

Total leukocytes per milliliter of blood are 7,000,000

$$= 7,000/\text{mm}^3$$

Differential white blood cell counts (percent distribution of types of leukocytes)

Polymorphonuclear granulocytes

Neutrophils 60-70%

Eosinophils 1-4%

Basophils 0.25-0.5%

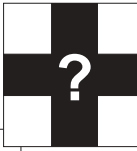
Mononuclear agranulocytes

Lymphocytes 25-33%

Monocytes 2-6%

Blood Type:

In medicine, classification of red blood cells by the presence of specific substances on their surface. Typing of red blood cells is a prerequisite for blood transfusion. In the early part of the 20th century, physicians discovered that blood transfusions often failed because the blood



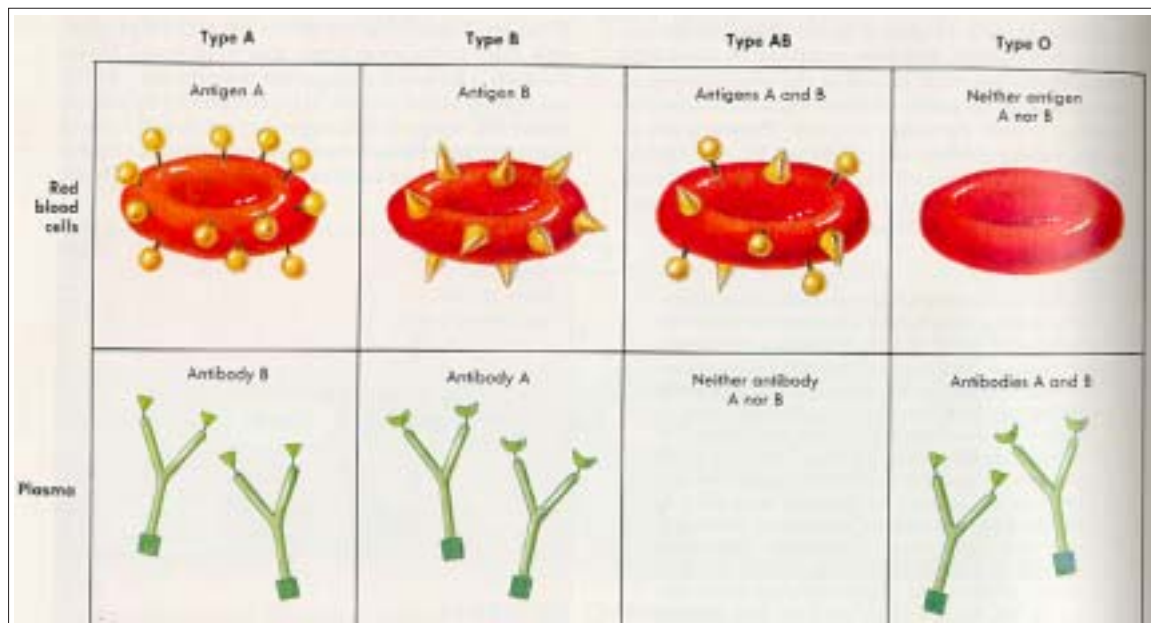
type of the recipient was not compatible with that of the donor.

The four blood types are known as A, B, AB and O. Blood type A contains red blood cells that have a substance A on their surface. This type of blood also contains an antibody directed against substance B; found on the cells of persons with blood type B. Type B blood contains the reverse combinations. Serum of blood type AB contains neither antibody, but red cells in this type of blood contain both A and B substances. In type O blood, neither substance is present on the red cells, but the individual is capable of forming antibodies directed against red cells containing substance A or B. If blood type A is transfused into a person with B type

blood, anti-A antibodies in the recipient will destroy the transfused A red cells. Because O type blood has neither substance on its red cells it can be given successfully to almost any person. Persons with blood type AB have no antibodies and can receive any of the four type of blood; thus blood types of O and AB are called universal donors and recipients, respectively.

Other heredity blood-group systems subsequently been discovered. The heredity blood constituent called Rh factor is of great importance in obstetrics and blood transfusions because it creates that can threaten the life of newborn infants. \hat{U}

ABO blood groups



Type A blood has red blood cells with Type A surface antigens and plasma with Type B antibodies. Type B blood has Type B surface antigens and plasma with Type A antibodies. Type AB blood has both Type A and Type B surface antigens and no plasma antibodies. Type O blood has no ABO surface antigens but both A and B plasma antibodies.



ao&w&f ayg&fpyf&f i&fomypPn&f rsm; ES h, i&f w&f . vly&f ef vly&f aqmi&f tsur&f rsm;

ayg&fpyf&f i&fom yPn&f rsm;

1? ao&f&n&f un&f (Plasma)

<p>- a&f</p> <p>- "gv&f qm; rsm; (electrolytes)</p> <p>- t m [m&f rsm; / p&f e&f x&f l y P n&f r sm; / "gv&f h&f i&f e&f rsm; / a [m&f r&f e&f rsm; / - ao&f&n&f un&f \ h&f v&f e&f rsm;</p>	<p>- ty&f u&f l l o, h&f qmi&f h&f y; on&f</p> <p>- p&f h&f ajymi&f v&f jci&f rsm; u&f l l -um; ch&f aqmi&f &f l&f h&f y; jci&f?</p> <p>- c, mu&f l f. t u&f l q p ES h a A p&f u&f l x&f e&f r n, d&f y; jci&f /</p> <p>- t ES h a o&f a -um t p&f v&f t y&f l f rsm; t -um; jy&f i&f y&f e&f t&f n&f rsm;. w z u&f p&f e&f t&f z d t m; t u&f l q u&f l p&f h&f ajymi&f v&f jci&f rsm; u&f l l -um; ch&f aqmi&f &f l&f h&f y; jci&f / ao&f&w&f f y g y P n&f r sm; u&f l l -um; c&f y P n&f t w&f c&f y r m o, h&f qmi&f h&f y; jci&f / ao&f&ch&f a p o n h t c s u f t v u f r s m ; / y, y P n f y \ h v e f r s m ; ?</p>	
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vbm; . ao&f&v&f t a&f t w&f l f

<p>2? ou&f&l&f v y p n f j' A p i f r s m ;</p> <p>(u) ao&f&e&f D r s m ; (Erythrocytes)</p> <p>(c) ao&f&e&f c y f y m ; r s m ; (Platelets)</p> <p>(*) ao&f, z O r s m ; (Leukocytes)</p> <p>- Neutrophils</p> <p>- Eosinophils</p> <p>- Basophils</p> <p>- Lymphocytes</p> <p>- B-Lymphocytes</p> <p>- T-Lymphocytes</p> <p>- Monocytes</p>	<p>- a t m u&f l q&f d i ES h u m A&f l h&f a t m u&f l q&f l f u l l o, h&f qmi&f h&f y; jci&f?</p> <p>- ao&f&ch&f a p a o m u, w&f e&f y&f o&f i b o n&f (hemostasis) ?</p> <p>- b u f w&f e&f t&f e&f t&f m; m; ES h t u&f l t y&f l P n&f r s m ; u&f l l O g r&f d&f c i&f?</p> <p>- ao&f&r w n l j z p&f h o m "gv&f i n v&f e&f y&f e&f j c i&f w&f e&f t a&f ; u&f l l o n&f?</p> <p>- [p&f p w m r i&f ES h h&f p a r i n w&f e&f l u l l v&f e&f h&f j r m u&f h&f a p j c i&f?</p> <p>- y, y P n f y \ h v e f r s m ; u&f l l x&f w&f l v&f y f a y ; j c i&f?</p> <p>- q&f v&f r s m ; u&f l l t&f e&f t&f e&f t&f m; . w&f e&f y&f e&f r u&f l l p&f p&f o&f h o y&f h&f y; j c i&f?</p> <p>- q&f v&f t y&f s u f t p&f ES h j y i f y P n&f r s m ; u&f l l O g r&f d&f b, h&f qmi&f h&f y; o n h a o&f&w&f f y g u v y p n f j z p&f e&f o, h&f qmi&f h&f y; o n h u m v?</p>	<p>- ao&f&e&f D p p h&f a y g i&f] 5,000,000/mm³</p> <p>- ao&f&e&f c y f y m ; p p h&f a y g i&f] 250,000/mm³</p> <p>- ao&f, z O p h&f a y g i&f] 7,000/mm³</p> <p>- 60-70%</p> <p>- 1-4%</p> <p>- 0.25-0.5%</p> <p>- 25-33%</p> <p>- 2-6%</p>
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Blood Constituents and their functions

Constituents

1. Plasma

- water	- carries heat	
- electrolytes	- buffering of pH changes	
- nutrients, wastes, gases, hormones	- acid balance of body	
- plasma proteins	- osmotic effect of extra cellular fluid between vascular and interstitial compartments, buffering of pH changes, transport media, clotting factors, antibodies	

2. Cellular Elements

Human Blood Cell Count

A. Erythrocytes	- oxygen & carbondioxide transport	Total RBC = 5,000,000/mm ³
B. Platelets	- hemostasis	Total platelets=250,000/mm ³
C. Leukocytes		Total WBC = 7,000/mm ³
- Neutrophils	- engulf bacteria and debris	60-70%
- Eosinophils	- important in allergic reaction	1-4%
- Basophils	- histamine and heparin liberation	0.25-0.5%
-Lymphocytes	- production of antibodies	25-33%
B-lymphocytes	- cell mediated immune response	
T-lymphocytes	- transit to become tissue macro phages	2-6%
- Monocytes		

The Male Reproductive Organs



The male reproductive system consists of external structures or genitals (the penis and scrotum) and internal structures (the testes, ducts, seminal vesicles, the prostate gland, and the bulbourethral glands).

The testes are two egg-shaped bodies that lie within a saclike structure called the scrotum. During fetal development the testes lie within the abdominal cavity. They descend into scrotum during the last two months of fetal life. The walls of the scrotum are composed of contractile tissue.

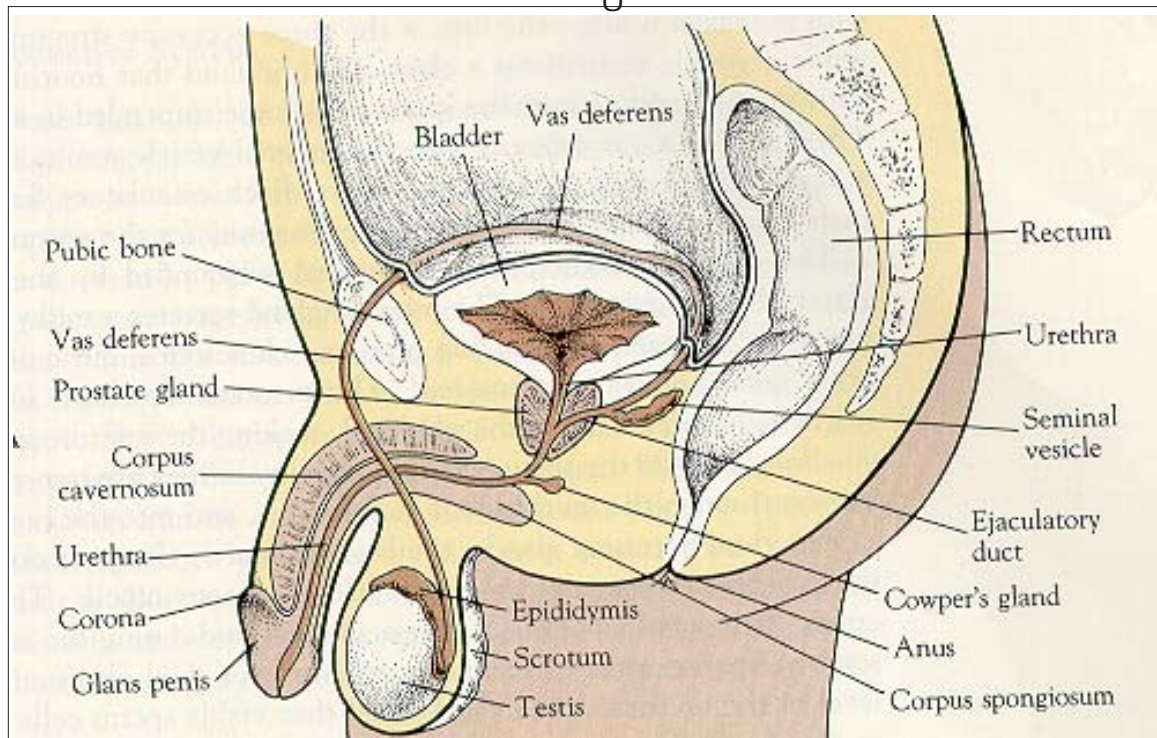
The testes are composed of seminiferous tubules and sperm is produced. This process is called "Spermatogenesis." Sperm cell development starts at about age 11 in boys and is influenced by the release of the hormone ICSH (interstitial cell stimulating hormone). This hormone is released from pituitary gland. It stimulates specific cells called the interstitial cells within the testes to begin producing the male sex hormone testosterone. Testosterone is primarily responsible for the gradual development of the secondary sex

characters at the onset of puberty. The production of fully matured sperm is by another hormone FSH secreted by pituitary gland. FSH influences the seminiferous tubules to begin to produce spermatozoa that are of fertilization.

The sperm cells do not stay in the seminiferous tubules, they are transferred through a system of ducts that lead to epididymis. Each epididymis leads into an passage way known as vas deferens. There are two vas deferens extend into the abdominal cavity, meets with seminal vesicle. The fusion of a vas deferens with the seminal vesicle results in formation of ejaculatory duct. This duct empties the sperm to urethra. This area is surrounded by the secondary accessory gland, the prostate gland. The prostate secretes with nourish the sperm cells.

The third accessory glands, the bulbourethral or Couper's gland: These paired glands fluid which helps for survival of sperms.

The combination of secretions from seminal vesicles and prostate glands combined with sperm is called semen.





trrslyb; t *lgsn;

trrslyb; t *lgtztpnf. tjyiyf zpnfrwof qdhtmu&drtrmuhaeomae&m (mons pubis) / Ewcrfom; uD (labia majora) / Ewcrfom; i, f (labia minor) / rfrt *lgtaph (clitoris) Esh trdor t *lzmwf Ewcrfom; i, f u; m; & d wdylye&m (vestibule) wly yofiuon? T t *lgtztpnf; pbnjciit; jzih rfrul ulzpnfon? t *lzmwf rtrmuhaeom ae&mul tar\$sm; jzih zhtlyx; on? Ewcrfom; uD Esh Ewcrfom; i, wloni tvsm; vlu f jzphaeom twet acqul, uav; r; jzpuon? Ewcrfom; i, f twet acqur; uulvilt *lgt a&jym; (prepuce) jzih tqowbn? , ta&jym; onf rfrt *lgtaph *viful zlx; ay; on?

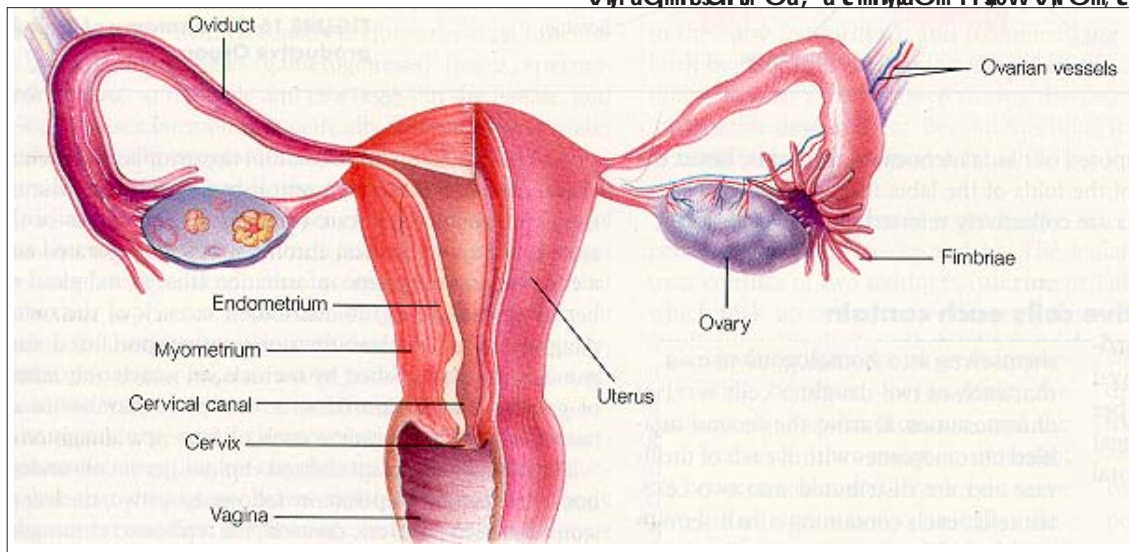
wdlylye&m (vestibule) / qpbep yeftayuf (urethral opening) / arvrfau; mif tayuf (vaginal orifice) wloni Ewcrfom; i, ftwefwfywvnduon? rfrt *lgtztpnf t0 wzulvcsu&ppxlv&nkxlvay; aom tusvii, foler [kvf vilquq&mwof acmarap&ef t&nivr& xlvay; aom *vif (brtbin's fan) ulvnf Tae&myif aw&on? , rS yrm% tenfi, f&om acnqdt&nivr& uulxlvv\$vf ay; on?

tyd; ; (lymen) onf arvrfau; mif. taygulul jzwl l qelwifaeom tvnjzpn? rfrtwefyif rlyb; t *lgtztpnf wof arvrfau; mif (vagina) / om; tdf (uterus) / om; Oylp yef (fallopian tubes) Esh

rr#0 tdfsr; (ovaries) wly yofiuon? om; tdfbnfao; i, homopawmbwvll t& f tpm; Eshyb, meftmjzilt epyqllwhbn? , onfxkl aom, uubm; t *lgyckjzpyl us, jye&om \ lyif qll&m ajymif vj; ifsr; twel jzpa t mif vlyaqmi Eibef &bn? om; tdf. t "luuom vlyef vlyaqmitsurfh oa, om; avmif; uD; eft welo ilvsvhomywdef usf wclul axmuly; jci; jzpn? oa, atmifyd r#0 om; tdf rly; ifonf om; tdf twef tajr, yg. twelit uqll tvh wly jzpy; on?

om; tdf atmulyif olylyvlyulom; tdf cji (cervix) [kac: on? , onf arvrfau; mif twef twf us, jye&onf vsr; on? olv&nbnf om; tdf Drsjzwl om; tdf twef o; i Eibon? om; tdf. tayyif olylyvlyul ul corpus ol [kvf om; tdf ul [hc: on? xll&mwof oa, atmifydonf r#0 u om; tdf rly; ifp; lyae&m, laom ae&njzpn? om; tdf. tayyif onf om; yef yefsr; twef yofon? , yelwcksi; pbnf rrs#0 tdf wcksi; qll& Odwnbn; on? , wlonf r#0 jzwb; & m vrfwckoz; f vlyaqmibn?

rr#0 tdfsr; onf a, mu; s; & d aO\$sr; Esh tv; m; o, mef whbn? , wly vlyef vlyaqmitsurfh r#0 sr; (eggs) xlvay; & ef jzpn? rrs#0 tdfsr; onf trvilt *lgt a [mrlsr; uulxlvv\$vf ay; on? , wlonf 'lvv vilt *lgt . p \ luvQ% m; r; z; uD; r; wof r; pbaomtcef u, rSyof vlyaqmibn? olom; , wly t "lvlyef vlyaqmitsurfh oa, atmifyaom r#0 wvll om; tdf



The female reproductive Organs



The external structure (genitals) of the female reproductive system consists of mons pubis, labia majora, labia minora, clitoris, and vestibule. These structures collectively form the vulva. The mons pubis is covered by pubic hair. The labia majora and labia minora are small longitudinal skin folds. The folds of labia minora end at prepuce, which covers the glands of the clitoris.

The vestibule, urethral opening, vaginal orifice are enclosed in labia minora. Bartholin's gland is also found here which secretes a minute amount of lubricating fluid.

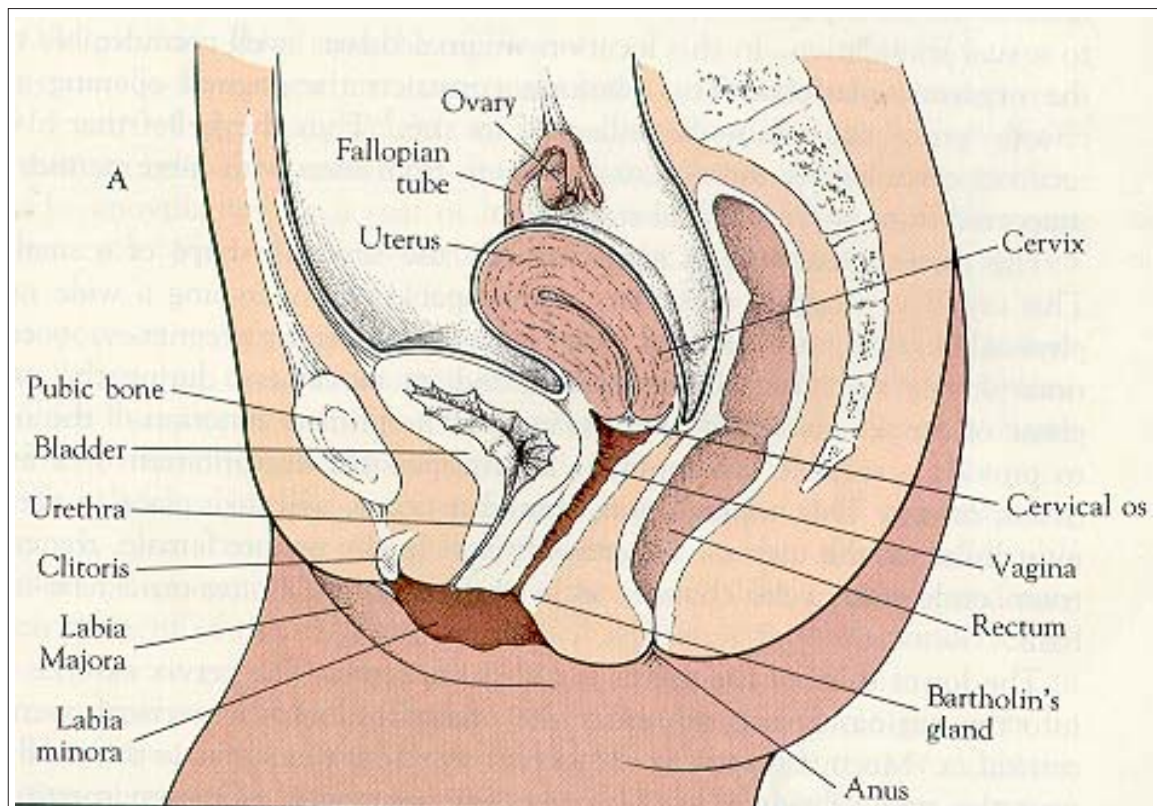
The hymen is layer stretches across the opening of the vagina. The internal reproductive structures of the female include the vagina, uterus, fallopian tubes and ovaries.

The uterus is approximately the size and shape of a small pear. It is a highly muscular organ capable of undergoing a wide range of physical changes.

The primary function of the uterus is to provide a suitable environment for the growth of the fetus. Implantation occurs in inner most layer, the endometrium.

The lower third of uterus is called cervix. It extends into the vagina. Sperm can enter the uterus through cervical opening. Upper two thirds of the uterus is called corpus or body. This is where implantation of the fertilized ovum takes place. Upper portion of uterus opens into two fallopian tubes, each directed towards an ovary. They serve as a passage way for ovum.

Ovaries are analogous to testes in the male. Their function is to produce the ova (eggs). The ovaries produce female sex hormones which play multiple roles in the development of female secondary sex characters, but their primary function is to prepare the endometrium of the uterus for possible implantation of a fertilized ovum. On average this preparation takes place for a healthy. Ū





tr̥or̥r̥sm; "rRwm&moβuDef

t r̥or̥r̥t awm̥r̥r̥; w̥f "Rwmay: jci f vlyaqmif jzpay: r̥. tpyll̥f (ol̥ [lw] t ajcp̥luf wnaqmu f_ ul̥ orw̥ toul (11) EβESH (16) Eβ̥um; w̥f jzpay: on? Tjzpay: r̥ullorw̥ aofay: cdf̥ (period) ol̥ [lw] vpo f aofqijci f [lac: on? Tjzpay: r̥. q̥l̥ i fr̥ orw̥ onf ul̥ Deaqmif Ell̥ef v̥vmu̥aom & ilusuf_ & bn̥ ul̥ azmfyon?

yll̥aofay: cdf̥zpr̥r̥ (28) & ul̥w̥f ol̥ [lw] ponf jzihzpb̥n? tenfql̥ (3) & uf S tr̥r̥; q̥l̥ (6) & uf txd vmon? r̥nb̥yijzpb̥umrl̥ ajrmuf̥r̥; p̥haom tr̥or̥r̥sm; t-um; w̥f Tjzpay: r̥r̥r̥ r̥w̥l̥ym; jcm; em; on? c, mu̥l̥ ftav; cdf̥ t [m&/ r̥l̥ \ l̥vl̥jci fESHuef̥r̥; a& q̥l̥ & m̥ t̥m; v̥laom t̥cuf t̥vuf̥r̥; onf tr̥or̥r̥i, f̥r̥. & moyefpyβ̥jci f (menarche) Esh̥q̥pyywb̥uf_ & bn̥?

t r̥or̥r̥ "RwmpuDefjzpay: r̥onf tyll̥f (3) yll̥ ol̥ [lw] tqih (3) qih & bn̥ [k, b̥xm; Ell̥bn̥?

- yxrt̥qib̥n̥f & moy̥: jci f t̥qih (wywte̥umon?)

- 'l̥v̥d̥ t̥qib̥n̥f t̥v̥#t̥jref̥ w̥ly̥b̥; aomt̥qih (wywte̥umon?) Esh̥

- w̥w̥d̥ t̥qib̥n̥f t̥& n̥p̥t̥k̥ & jci fESH̥q̥l̥aom t̥qih (Eβ̥jwte̥umon?)

& moy̥: jci f. yxr̥ & ul̥lyxraof̥qifaom & uf (ol̥ [lw] yxr̥ & moy̥/ maom & ujz̥lpwib̥n̥? & moy̥: jci f.

t̥cuf̥yronf ul̥ Def̥& j̥i fESH̥or̥. om; t̥t̥e̥H̥S (5) & uf S (7) & uf t̥w̥f aof̥, yu; jci f̥ull̥azmfyon? tr̥or̥r̥w̥o v̥#f̥ aof̥ESH̥v̥p̥b̥; c̥l̥u̥w̥o t̥e̥uq̥i r̥n? T̥ t̥qib̥ yxr̥ & uf̥r̥; t̥awm̥t̥w̥f̥w̥f̥ "Rwmay: jci f (aof̥qijci f) tr̥r̥; q̥l̥zpb̥n̥? T̥ w̥p̥b̥; r̥r̥; u̥b̥ur̥/ z, & d̥r̥_ y̥l̥aj̥mu̥ap̥& ef̥ om; t̥d̥f̥ u̥ub̥m; ul̥j̥a-um̥i h̥t̥c̥t̥ r̥or̥r̥r̥; w̥f̥ & mod̥ v̥mp̥o l̥um̥v̥t̥w̥f̥ ou̥aw̥m̥i h̥ou̥b̥m̥r̥ & d̥om̥ em̥u̥s̥i f̥ull̥ aw̥@ ul̥bn̥? T̥ em̥u̥s̥i f̥/ c̥p̥m̥; r̥r̥; ul̥l̥ & moy̥: onf̥t̥ c̥d̥v̥f̥ q̥l̥pyl̥/ em̥u̥s̥i p̥h̥ c̥p̥m̥; & jci f (menor̥r̥ba) [l̥od̥ & uon?

& moy̥: jci f. t̥v̥#t̥jref̥ w̥ly̥b̥; aomt̥qih̥l̥aof̥ qijci f̥ & y̥l̥v̥e̥aomt̥c̥d̥f̥pwib̥n̥f̥ wywte̥umon? T̥ t̥qib̥n̥f̥y̥l̥x̥& d̥v̥i f̥ (ol̥ [lw] a [m̥f̥e̥f̥x̥l̥v̥f̥v̥i f̥r̥s (FSH - Follicle Stimulating Hormone) ul̥l̥ x̥l̥v̥f̥v̥f̥ v̥l̥j̥ci f̥t̥m̥j̥i h̥T̥ t̥qih̥l̥v̥f̥r̥i̥d̥e̥f̥c̥y̥xm; on? om; O t̥d̥f̥ & i l̥m̥r̥_ ul̥p̥w̥i ap̥& ef̥t̥ w̥l̥f̥ # onf̥ om; O t̥d̥f̥ ul̥v̥y̥aqmif apon? # v̥f̥r̥i̥r̥a t̥mu̥l̥w̥f̥ follicles; r̥r̥; & i l̥f̥r̥i̥v̥m̥ on?

, w̥l̥Sa [m̥f̥e̥f̥ ul̥l̥ x̥l̥v̥f̥v̥y̥ay; on? estrogen . r̥lv̥ y̥l̥y̥aqmif̥c̥u̥f̥aof̥a-um̥ax̥mu̥l̥f̥r̥; y̥d̥x̥b̥om̥ om; t̥d̥f̥t̥w̥f̥ e̥ll̥p̥w̥i z; v̥m̥ap̥& ef̥t̥ w̥l̥f̥ v̥y̥aqmif̥ay; on? estrogen y̥p̥i f̥r̥i̥r̥; v̥m̥v̥#f̥ FHS p̥p̥x̥l̥v̥f̥_ av̥s̥on? , t̥c̥d̥v̥f̥ y̥l̥x̥& d̥SLH ul̥l̥ x̥l̥v̥y̥ay; jci f̥j̥i h̥Oa, u; jci f̥ y̥l̥aj̥mu̥ap̥& ef̥t̥ w̥l̥f̥ j̥y̥i q̥ib̥n̥? om; O t̥d̥f̥ Som̥O v̥f̥v̥x̥l̥v̥y̥ay; jci f̥ul̥om̥Oa, u; jci f̥ [k ac: onf̥ om; Oa, u- y̥l̥aem̥u̥l̥ "RwmpuDef. t̥& n̥p̥x̥l̥v̥f̥t̥qih̥ p̥w̥ib̥n̥? *a& y̥d̥) θ̥t̥v̥i, l̥ t̥u̥e̥y̥l̥onf̥ Corpus luteum t̥jzpb̥y̥l̥b̥, meh̥j̥ym̥i f̥on? Corpus Luteum onf̥ estrogen Esh̥y̥ \ l̥l̥sup̥w̥ef̥ Eβ̥f̥v̥l̥ul̥ x̥l̥v̥y̥ay; on? y̥ \ l̥l̥sup̥w̥ef̥ onf̥ om; t̥d̥f̥t̥ w̥l̥f̥ e̥ll̥w̥n̥aqmuf̥ r̥ul̥ v̥y̥aqmib̥n̥? tu, l̥ ul̥ Deaqmif̥c̥i f̥ r̥& d̥y̥g̥u̥ y̥ \ l̥l̥sup̥ w̥ef̥ onf̥y̥l̥x̥& d̥v̥i f̥c̥u̥j̥y̥ci f̥j̥i h̥LH x̥l̥v̥f̥y̥j̥ci f̥ul̥y̥l̥v̥e̥ ap̥y̥d̥) Corpus Luteum onf̥v̥n̥f̥ (24) & ul̥y̥w̥De̥j̥u̥s̥i v̥l̥v̥f̥p̥w̥i f̥ l̥y̥s̥p̥on? estrogen Esh̥y̥ \ l̥l̥sup̥w̥ef̥ y̥r̥m̥% onf̥ (28) & uf S p̥l̥ av̥s̥m̥u̥s̥v̥m̥j̥ci f̥j̥i h̥om; t̥d̥f̥t̥ w̥l̥f̥ e̥ll̥bn̥f̥ om; t̥d̥f̥t̥ S̥u̥b̥u̥s v̥m̥y̥d̥ aem̥u̥l̥v̥; ul̥f̥ "RwmpuDef ul̥l̥jzpb̥on?

& moy̥: jci f̥w̥f̥ a [m̥f̥e̥f̥r̥; w̥m̥Def, & on̥l̥u, 1? FSH - Follicle Stimulating Hormone 2? LH - Luteinizing Hormone 3? Oestrogen 4? Progesterone

1? FSH — t̥x̥ul̥w̥f̥ azmf̥y̥y̥donf̥t̥ w̥l̥f̥ , a [m̥f̥e̥f̥ onf̥ y̥l̥x̥& d̥v̥i f̥r̥s x̥l̥v̥f̥y̥on? aof̥a-um̥w̥f̥ y̥ v̥n̥f̥y̥w̥y̥d̥ om; O t̥d̥f̥t̥ m; & i l̥u̥s̥ub̥om̥ om; O ay̥g̥u̥z̥; jci f̥ul̥v̥r̥f̥! , ebn̥? T̥ O t̥d̥v̥i, f̥r̥; onf̥ FSH . v̥f̥r̥i̥r̥a t̥mu̥l̥w̥f̥ estrogen a [m̥f̥e̥f̥ ul̥l̥ x̥l̥v̥f̥v̥y̥ay; on?

2/ LH — onf̥ r̥r̥#Oa, u; jci f̥ y̥l̥aj̥mu̥ap̥& ef̥t̥ y̥aom Pituitary a [m̥f̥e̥f̥jzpb̥n̥? ajrmuf̥r̥; p̥haom LH a [m̥f̥e̥f̥r̥; ul̥l̥ & mod̥puDef. (14) & ul̥v̥f̥ x̥l̥v̥f̥v̥y̥ay; on?

3? Estrogen — onf̥ tr̥or̥r̥v̥i̥l̥a [m̥f̥e̥f̥ jzpb̥n̥? tr̥or̥r̥r̥; w̥f̥ om; O t̥d̥f̥t̥ w̥l̥f̥ jzpay: on? , onf̥ v̥l̥Eβ̥f̥v̥l̥w̥f̥ r̥r̥; p̥haom v̥ly̥ef̥r̥; ul̥l̥v̥y̥aqmib̥n̥? 'l̥v̥d̥ v̥l̥f̥t̥ *l̥y̥Q% m̥r̥; z̥p̥ z; r̥t̥w̥l̥v̥m̥De̥& bn̥? & moy̥: jci f̥t̥w̥f̥v̥l̥v̥n̥f̥ oa, om; av̥m̥i f̥. t̥m [m̥& Esh̥ om; t̥d̥f̥e̥ll̥w̥d̥f̥ w̥g̥ l̥y̥j̥ci f̥/ oa, a t̥m̥j̥ci f̥w̥l̥v̥y̥aqmif̥ Ell̥ef̥ tr̥or̥r̥t̥ *l̥p̥ul̥o i̥av̥s̥f̥ aom y̥w̥De̥j̥u̥s̥i jzpb̥t̥m̥i̥aqmif̥ & l̥ay; on? estrogen ul̥ba, w̥m̥; aq; t̥jzpb̥v̥n̥f̥ to̥l̥ yon? estrogen ul̥l̥aof̥q̥l̥jci f̥ (menopause). ou̥b̥ub̥om̥ r̥& j̥i f̥r̥s̥ou̥b̥m̥ap̥& ef̥ Ell̥bn̥f̥ x̥l̥j̥ci f̥ul̥x̥e̥f̥c̥y̥& ef̥ t̥ \ l̥y̥& m̥* f̥Shom; av̥# & ef̥t̥ v̥m; t̥v̥m̥ & l̥ aom ul̥ De (threatened abortion) ul̥ ub̥& ef̥t̥ w̥l̥v̥n̥f̥ to̥l̥ yon?

1? FSH — t̥x̥ul̥w̥f̥ azmf̥y̥y̥donf̥t̥ w̥l̥f̥ , a [m̥f̥e̥f̥ onf̥ y̥l̥x̥& d̥v̥i f̥r̥s x̥l̥v̥f̥y̥on? aof̥a-um̥w̥f̥ y̥ v̥n̥f̥y̥w̥y̥d̥ om; O t̥d̥f̥t̥ m; & i l̥u̥s̥ub̥om̥ om; O ay̥g̥u̥z̥; jci f̥ul̥v̥r̥f̥! , ebn̥? T̥ O t̥d̥v̥i, f̥r̥; onf̥ FSH . v̥f̥r̥i̥r̥a t̥mu̥l̥w̥f̥ estrogen a [m̥f̥e̥f̥ ul̥l̥ x̥l̥v̥f̥v̥y̥ay; on?

2/ LH — onf̥ r̥r̥#Oa, u; jci f̥ y̥l̥aj̥mu̥ap̥& ef̥t̥ y̥aom Pituitary a [m̥f̥e̥f̥jzpb̥n̥? ajrmuf̥r̥; p̥haom LH a [m̥f̥e̥f̥r̥; ul̥l̥ & mod̥puDef. (14) & ul̥v̥f̥ x̥l̥v̥f̥v̥y̥ay; on?

3? Estrogen — onf̥ tr̥or̥r̥v̥i̥l̥a [m̥f̥e̥f̥ jzpb̥n̥? tr̥or̥r̥r̥; w̥f̥ om; O t̥d̥f̥t̥ w̥l̥f̥ jzpay: on? , onf̥ v̥l̥Eβ̥f̥v̥l̥w̥f̥ r̥r̥; p̥haom v̥ly̥ef̥r̥; ul̥l̥v̥y̥aqmib̥n̥? 'l̥v̥d̥ v̥l̥f̥t̥ *l̥y̥Q% m̥r̥; z̥p̥ z; r̥t̥w̥l̥v̥m̥De̥& bn̥? & moy̥: jci f̥t̥w̥f̥v̥l̥v̥n̥f̥ oa, om; av̥m̥i f̥. t̥m [m̥& Esh̥ om; t̥d̥f̥e̥ll̥w̥d̥f̥ w̥g̥ l̥y̥j̥ci f̥/ oa, a t̥m̥j̥ci f̥w̥l̥v̥y̥aqmif̥ Ell̥ef̥ tr̥or̥r̥t̥ *l̥p̥ul̥o i̥av̥s̥f̥ aom y̥w̥De̥j̥u̥s̥i jzpb̥t̥m̥i̥aqmif̥ & l̥ay; on? estrogen ul̥ba, w̥m̥; aq; t̥jzpb̥v̥n̥f̥ to̥l̥ yon? estrogen ul̥l̥aof̥q̥l̥jci f̥ (menopause). ou̥b̥ub̥om̥ r̥& j̥i f̥r̥s̥ou̥b̥m̥ap̥& ef̥ Ell̥bn̥f̥ x̥l̥j̥ci f̥ul̥x̥e̥f̥c̥y̥& ef̥ t̥ \ l̥y̥& m̥* f̥Shom; av̥# & ef̥t̥ v̥m; t̥v̥m̥ & l̥ aom ul̥ De (threatened abortion) ul̥ ub̥& ef̥t̥ w̥l̥v̥n̥f̥ to̥l̥ yon?

, w̥l̥Sa [m̥f̥e̥f̥ ul̥l̥ x̥l̥v̥f̥v̥y̥ay; on? estrogen . r̥lv̥ y̥l̥y̥aqmif̥c̥u̥f̥aof̥a-um̥ax̥mu̥l̥f̥r̥; y̥d̥x̥b̥om̥ om; t̥d̥f̥t̥w̥f̥ e̥ll̥p̥w̥i z; v̥m̥ap̥& ef̥t̥ w̥l̥f̥ v̥y̥aqmif̥ay; on? estrogen y̥p̥i f̥r̥i̥r̥; v̥m̥v̥#f̥ FHS p̥p̥x̥l̥v̥f̥_ av̥s̥on? , t̥c̥d̥v̥f̥ y̥l̥x̥& d̥SLH ul̥l̥ x̥l̥v̥y̥ay; jci f̥j̥i h̥Oa, u; jci f̥ y̥l̥aj̥mu̥ap̥& ef̥t̥ w̥l̥f̥ j̥y̥i q̥ib̥n̥? om; O t̥d̥f̥ Som̥O v̥f̥v̥x̥l̥v̥y̥ay; jci f̥ul̥om̥Oa, u; jci f̥ [k ac: onf̥ om; Oa, u- y̥l̥aem̥u̥l̥ "RwmpuDef. t̥& n̥p̥x̥l̥v̥f̥t̥qih̥ p̥w̥ib̥n̥? *a& y̥d̥) θ̥t̥v̥i, l̥ t̥u̥e̥y̥l̥onf̥ Corpus luteum t̥jzpb̥y̥l̥b̥, meh̥j̥ym̥i f̥on? Corpus Luteum onf̥ estrogen Esh̥y̥ \ l̥l̥sup̥w̥ef̥ Eβ̥f̥v̥l̥ul̥ x̥l̥v̥y̥ay; on? y̥ \ l̥l̥sup̥w̥ef̥ onf̥ om; t̥d̥f̥t̥ w̥l̥f̥ e̥ll̥w̥n̥aqmuf̥ r̥ul̥ v̥y̥aqmib̥n̥? tu, l̥ ul̥ Deaqmif̥c̥i f̥ r̥& d̥y̥g̥u̥ y̥ \ l̥l̥sup̥ w̥ef̥ onf̥y̥l̥x̥& d̥v̥i f̥c̥u̥j̥y̥ci f̥j̥i h̥LH x̥l̥v̥f̥y̥j̥ci f̥ul̥y̥l̥v̥e̥ ap̥y̥d̥) Corpus Luteum onf̥v̥n̥f̥ (24) & ul̥y̥w̥De̥j̥u̥s̥i v̥l̥v̥f̥p̥w̥i f̥ l̥y̥s̥p̥on? estrogen Esh̥y̥ \ l̥l̥sup̥w̥ef̥ y̥r̥m̥% onf̥ (28) & uf S p̥l̥ av̥s̥m̥u̥s̥v̥m̥j̥ci f̥j̥i h̥om; t̥d̥f̥t̥ w̥l̥f̥ e̥ll̥bn̥f̥ om; t̥d̥f̥t̥ S̥u̥b̥u̥s v̥m̥y̥d̥ aem̥u̥l̥v̥; ul̥f̥ "RwmpuDef ul̥l̥jzpb̥on?

& moy̥: jci f̥w̥f̥ a [m̥f̥e̥f̥r̥; w̥m̥Def, & on̥l̥u, 1? FSH - Follicle Stimulating Hormone 2? LH - Luteinizing Hormone 3? Oestrogen 4? Progesterone

1? FSH — t̥x̥ul̥w̥f̥ azmf̥y̥y̥donf̥t̥ w̥l̥f̥ , a [m̥f̥e̥f̥ onf̥ y̥l̥x̥& d̥v̥i f̥r̥s x̥l̥v̥f̥y̥on? aof̥a-um̥w̥f̥ y̥ v̥n̥f̥y̥w̥y̥d̥ om; O t̥d̥f̥t̥ m; & i l̥u̥s̥ub̥om̥ om; O ay̥g̥u̥z̥; jci f̥ul̥v̥r̥f̥! , ebn̥? T̥ O t̥d̥v̥i, f̥r̥; onf̥ FSH . v̥f̥r̥i̥r̥a t̥mu̥l̥w̥f̥ estrogen a [m̥f̥e̥f̥ ul̥l̥ x̥l̥v̥f̥v̥y̥ay; on?

2/ LH — onf̥ r̥r̥#Oa, u; jci f̥ y̥l̥aj̥mu̥ap̥& ef̥t̥ y̥aom Pituitary a [m̥f̥e̥f̥jzpb̥n̥? ajrmuf̥r̥; p̥haom LH a [m̥f̥e̥f̥r̥; ul̥l̥ & mod̥puDef. (14) & ul̥v̥f̥ x̥l̥v̥f̥v̥y̥ay; on?

3? Estrogen — onf̥ tr̥or̥r̥v̥i̥l̥a [m̥f̥e̥f̥ jzpb̥n̥? tr̥or̥r̥r̥; w̥f̥ om; O t̥d̥f̥t̥ w̥l̥f̥ jzpay: on? , onf̥ v̥l̥Eβ̥f̥v̥l̥w̥f̥ r̥r̥; p̥haom v̥ly̥ef̥r̥; ul̥l̥v̥y̥aqmib̥n̥? 'l̥v̥d̥ v̥l̥f̥t̥ *l̥y̥Q% m̥r̥; z̥p̥ z; r̥t̥w̥l̥v̥m̥De̥& bn̥? & moy̥: jci f̥t̥w̥f̥v̥l̥v̥n̥f̥ oa, om; av̥m̥i f̥. t̥m [m̥& Esh̥ om; t̥d̥f̥e̥ll̥w̥d̥f̥ w̥g̥ l̥y̥j̥ci f̥/ oa, a t̥m̥j̥ci f̥w̥l̥v̥y̥aqmif̥ Ell̥ef̥ tr̥or̥r̥t̥ *l̥p̥ul̥o i̥av̥s̥f̥ aom y̥w̥De̥j̥u̥s̥i jzpb̥t̥m̥i̥aqmif̥ & l̥ay; on? estrogen ul̥ba, w̥m̥; aq; t̥jzpb̥v̥n̥f̥ to̥l̥ yon? estrogen ul̥l̥aof̥q̥l̥jci f̥ (menopause). ou̥b̥ub̥om̥ r̥& j̥i f̥r̥s̥ou̥b̥m̥ap̥& ef̥ Ell̥bn̥f̥ x̥l̥j̥ci f̥ul̥x̥e̥f̥c̥y̥& ef̥ t̥ \ l̥y̥& m̥* f̥Shom; av̥# & ef̥t̥ v̥m; t̥v̥m̥ & l̥ aom ul̥ De (threatened abortion) ul̥ ub̥& ef̥t̥ w̥l̥v̥n̥f̥ to̥l̥ yon?

1? FSH — t̥x̥ul̥w̥f̥ azmf̥y̥y̥donf̥t̥ w̥l̥f̥ , a [m̥f̥e̥f̥ onf̥ y̥l̥x̥& d̥v̥i f̥r̥s x̥l̥v̥f̥y̥on? aof̥a-um̥w̥f̥ y̥ v̥n̥f̥y̥w̥y̥d̥ om; O t̥d̥f̥t̥ m; & i l̥u̥s̥ub̥om̥ om; O ay̥g̥u̥z̥; jci f̥ul̥v̥r̥f̥! , ebn̥? T̥ O t̥d̥v̥i, f̥r̥; onf̥ FSH . v̥f̥r̥i̥r̥a t̥mu̥l̥w̥f̥ estrogen a [m̥f̥e̥f̥ ul̥l̥ x̥l̥v̥f̥v̥y̥ay; on?

2/ LH — onf̥ r̥r̥#Oa, u; jci f̥ y̥l̥aj̥mu̥ap̥& ef̥t̥ y̥aom Pituitary a [m̥f̥e̥f̥jzpb̥n̥? ajrmuf̥r̥; p̥haom LH a [m̥f̥e̥f̥r̥; ul̥l̥ & mod̥puDef. (14) & ul̥v̥f̥ x̥l̥v̥f̥v̥y̥ay; on?

3? Estrogen — onf̥ tr̥or̥r̥v̥i̥l̥a [m̥f̥e̥f̥ jzpb̥n̥? tr̥or̥r̥r̥; w̥f̥ om; O t̥d̥f̥t̥ w̥l̥f̥ jzpay: on? , onf̥ v̥l̥Eβ̥f̥v̥l̥w̥f̥ r̥r̥; p̥haom v̥ly̥ef̥r̥; ul̥l̥v̥y̥aqmib̥n̥? 'l̥v̥d̥ v̥l̥f̥t̥ *l̥y̥Q% m̥r̥; z̥p̥ z; r̥t̥w̥l̥v̥m̥De̥& bn̥? & moy̥: jci f̥t̥w̥f̥v̥l̥v̥n̥f̥ oa, om; av̥m̥i f̥. t̥m [m̥& Esh̥ om; t̥d̥f̥e̥ll̥w̥d̥f̥ w̥g̥ l̥y̥j̥ci f̥/ oa, a t̥m̥j̥ci f̥w̥l̥v̥y̥aqmif̥ Ell̥ef̥ tr̥or̥r̥t̥ *l̥p̥ul̥o i̥av̥s̥f̥ aom y̥w̥De̥j̥u̥s̥i jzpb̥t̥m̥i̥aqmif̥ & l̥ay; on? estrogen ul̥ba, w̥m̥; aq; t̥jzpb̥v̥n̥f̥ to̥l̥ yon? estrogen ul̥l̥aof̥q̥l̥jci f̥ (menopause). ou̥b̥ub̥om̥ r̥& j̥i f̥r̥s̥ou̥b̥m̥ap̥& ef̥ Ell̥bn̥f̥ x̥l̥j̥ci f̥ul̥x̥e̥f̥c̥y̥& ef̥ t̥ \ l̥y̥& m̥* f̥Shom; av̥# & ef̥t̥ v̥m; t̥v̥m̥ & l̥ aom ul̥ De (threatened abortion) ul̥ ub̥& ef̥t̥ w̥l̥v̥n̥f̥ to̥l̥ yon?

1? FSH — t̥x̥ul̥w̥f̥ azmf̥y̥y̥donf̥t̥ w̥l̥f̥ , a [m̥f̥e̥f̥ onf̥ y̥l̥x̥& d̥v̥i f̥r̥s x̥l̥v̥f̥y̥on? aof̥a-um̥w̥f̥ y̥ v̥n̥f̥y̥w̥y̥d̥ om; O t̥d̥f̥t̥ m; & i l̥u̥s̥ub̥om̥ om; O ay̥g̥u̥z̥; jci f̥ul̥v̥r̥f̥! , ebn̥? T̥ O t̥d̥v̥i, f̥r̥; onf̥ FSH . v̥f̥r̥i̥r̥a t̥mu̥l̥w̥f̥ estrogen a [m̥f̥e̥f̥ ul̥l̥ x̥l̥v̥f̥v̥y̥ay; on?

2/ LH — onf̥ r̥r̥#Oa, u; jci f̥ y̥l̥aj̥mu̥ap̥& ef̥t̥ y̥aom Pituitary a [m̥f̥e̥f̥jzpb̥n̥? ajrmuf̥r̥; p̥haom LH a [m̥f̥e̥f̥r̥; ul̥l̥ & mod̥puDef. (14) & ul̥v̥f̥ x̥l̥v̥f̥v̥y̥ay; on?

3? Estrogen — onf̥ tr̥or̥r̥v̥i̥l̥a [m̥f̥e̥f̥ jzpb̥n̥? tr̥or̥r̥r̥; w̥f̥ om; O t̥d̥f̥t̥ w̥l̥f̥ jzpay: on? , onf̥ v̥l̥Eβ̥f̥v̥l̥w̥f̥ r̥r̥; p̥haom v̥ly̥ef̥r̥; ul̥l̥v̥y̥aqmib̥n̥? 'l̥v̥d̥ v̥l̥f̥t̥ *l̥y̥Q% m̥r̥; z̥p̥ z; r̥t̥w̥l̥v̥m̥De̥& bn̥? & moy̥: jci f̥t̥w̥f̥v̥l̥v̥n̥f̥ oa, om; av̥m̥i f̥. t̥m [m̥& Esh̥ om; t̥d̥f̥e̥ll̥w̥d̥f̥ w̥g̥ l̥y̥j̥ci f̥/ oa, a t̥m̥j̥ci f̥w̥l̥v̥y̥aqmif̥ Ell̥ef̥ tr̥or̥r̥t̥ *l̥p̥ul̥o i̥av̥s̥f̥ aom y̥w̥De̥j̥u̥s̥i jzpb̥t̥m̥i̥aqmif̥ & l̥ay; on? estrogen ul̥ba, w̥m̥; aq; t̥jzpb̥v̥n̥f̥ to̥l̥ yon? estrogen ul̥l̥aof̥q̥l̥jci f̥ (menopause). ou̥b̥ub̥om̥ r̥& j̥i f̥r̥s̥ou̥b̥m̥ap̥& ef̥ Ell̥bn̥f̥ x̥l̥j̥ci f̥ul̥x̥e̥f̥c̥y̥& ef̥ t̥ \ l̥y̥& m̥* f̥Shom; av̥# & ef̥t̥ v̥m; t̥v̥m̥ & l̥ aom ul̥ De (threatened abortion) ul̥ ub̥& ef̥t̥ w̥l̥v̥n̥f̥ to̥l̥ yon?

1? FSH — t̥x̥ul̥w̥f̥ azmf̥y̥y̥donf̥t̥ w̥l̥f̥ , a [m̥f̥e̥f̥ onf̥ y̥l̥x̥& d̥v̥i f̥r̥s x̥l̥v̥f̥y̥on? aof̥a-um̥w̥f̥ y̥ v̥n̥f̥y̥w̥y̥d̥ om; O t̥d̥f̥t̥ m; & i l̥u̥s̥ub̥om̥ om; O ay̥g̥u̥z̥; jci f̥ul̥v̥r̥f̥! , ebn̥? T̥ O t̥d̥v̥i, f̥r̥; onf̥ FSH . v̥f̥r̥i̥r̥a t̥mu̥l̥w̥f̥ estrogen a [m̥f̥e̥f̥ ul̥l̥ x̥l̥v̥f̥v̥y̥ay; on?

2/ LH — onf̥ r̥r̥#Oa, u; jci f̥ y̥l̥aj̥mu̥ap̥& ef̥t̥ y̥aom Pituitary a [m̥f̥e̥f̥jzpb̥n̥? ajrmuf̥r̥; p̥haom LH a [m̥f̥e̥f̥r̥; ul̥l̥ & mod̥puDef. (14) & ul̥v̥f̥ x̥l̥v̥f̥v̥y̥ay; on?

3? Estrogen — onf̥ tr̥or̥r̥v̥i̥l̥a [m̥f̥e̥f̥ jzpb̥n̥? tr̥or̥r̥r̥; w̥f̥ om; O t

Menstrual Cycle



Most girls have the establishment, or beginning, of menstrual function between the ages of 11 and 16. This is called their "period" or monthly bleeding. This means that they are old enough to become pregnant.

The normal period comes every 28 days or so, and lasts 3 to 6 days. However, this varies a lot amongst women. Body weight, nutrition, heredity, and overall health factors that are related to menarche.

The menstrual cycle can be thought of as occurring in three segments or phases.

The first is the menstrual phase (lasting about one week).

The second is the proliferative phase (lasting about one week) and

The third is secretory phase (lasting about 2 weeks).

Day one of the cycle starts with the first day of bleeding or menstrual flow. The menstrual phase signals that a pregnancy has not taken place and that her uterine lining is being sloughed off during a 5 to 7 day period. A woman will discharge about one-half cup of blood and tissue. The menstrual flow is heaviest during the first days of this phase. Since the muscular uterus contracts to accomplish this tissue removal, some women experience uncomfortable pain during menstruation. This feeling of pain is known as "Dysmenorrhea".

The proliferative phase of the menstrual cycle starts about the time menstruation stops. Lasting about one week, this phase is first influenced by the release of follicle stimulating hormone (FSH) from the pituitary gland. FSH directs the ovaries to start the process of maturing the primary ovarian follicles. As these follicles ripen under FSH influence, they release the hormone estrogen. Estrogen's primary function is to direct the endometrium to start the development of a thick, highly vascular wall. As the estrogen levels increase, the secretion of FSH is reduced. At this point the pituitary gland prepares to secrete luteinizing hormone (LH) to accomplish

ovulation. The release of ovum is called ovulation.

After ovulation, the secretory phase of the menstrual cycle starts. When the remnants of the graffian follicle restructure themselves into a corpus luteum. The corpus luteum secretes estrogen as well as progesterone. Progesterone directs the endometrial build up. If pregnancy does not occur, progesterone signal the pituitary to stop the release of LH and the corpus luteum starts to degenerate on about the 24th day. Both estrogen and progesterone levels diminish by the 28th day, the endometrium is shed from the uterus and the menstrual cycle starts again.

Rules of hormone in menstrual cycle :

1. FSH, Follicular Stimulating Hormone
2. LH, Luteinizing Hormone
3. Estrogen
4. Progesterone

1. FSH: Follicular Stimulating Hormone, as mentioned above, is released from the pituitary gland. It circulates in the blood stream and directs the ovary to start the maturing process of ovarian follicles. Under the influence of FSH these follicles release estrogen.

2. LH: is the pituitary hormone required to accomplish ovulation. Massive quantities of LH are released on about the 14th day of the menstrual cycle.

3. Estrogen: is the female sex hormones. In females estrogen is formed in the ovary. It has various functions in both sexes. It is responsible for the development of secondary sex characters and during menstrual cycle it acts on female genitalia to produce an environment suitable for fertilization, implantation, and nutrition for the early embryo. Estrogen is used in oral contraceptives.

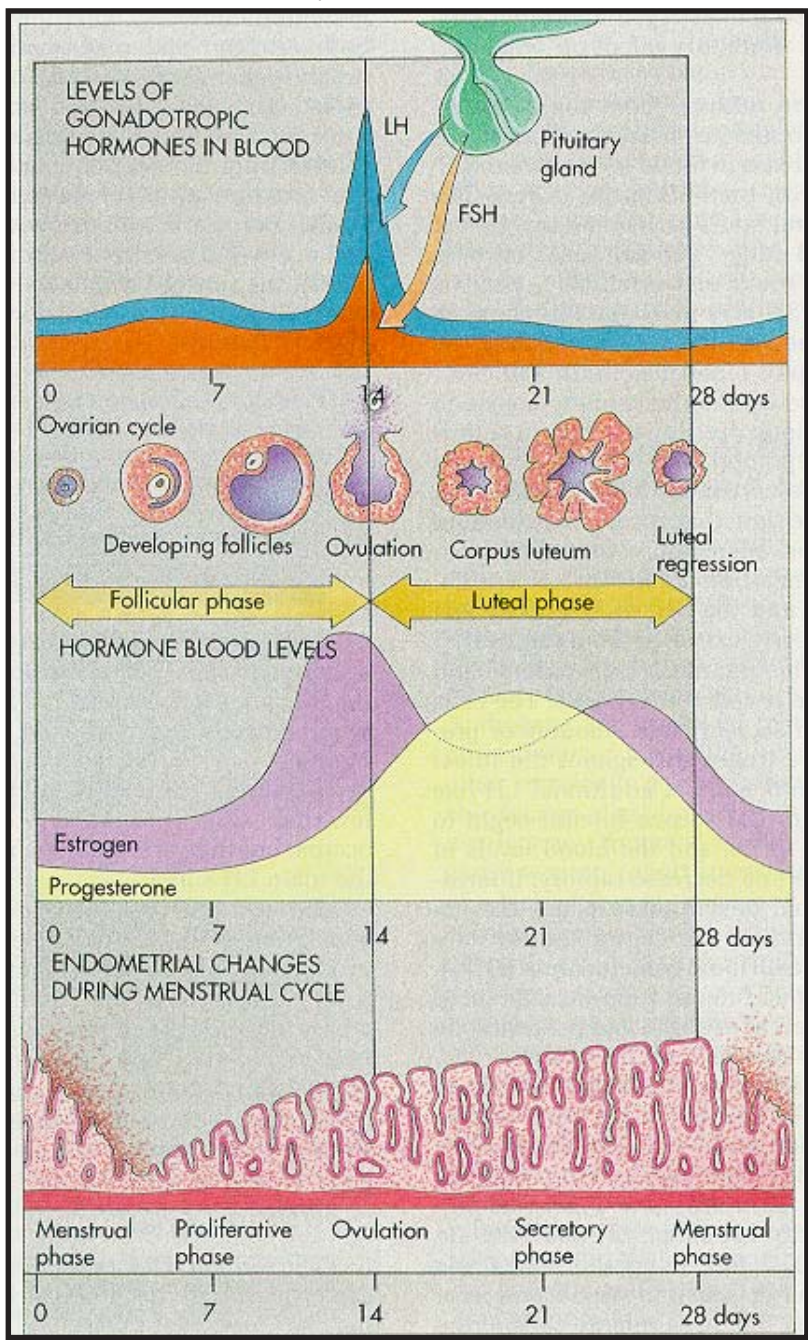
It is also used to relief the discomfort of menopause, inhibition of lactation, treatment of osteoporosis and threatened abortion.



4? Progesterone — **u**ll *Corpus Luteum* rS *adrenal cortex* Esh tcsifrs xlvvsvon? , uuu Deull wnaqmuapaom a [mrefESHu Deurwiltbu Deull tmay; aoma [mref [lvnfac: onf , . vyaqmitsurfb uil Dequvuf wn&ap&ef twul om; tftt wif oi hvmbom ywDefusitull xef; xm; &ef "RwmpuDef tyllfwif uvypnf wlyb; aom tqils t&nppxlvom tqilbajmi(vy) oa, atmiybaom om; OullvutkeESHze z; wlvu&eft wul om; tiffull jytqiby; onf

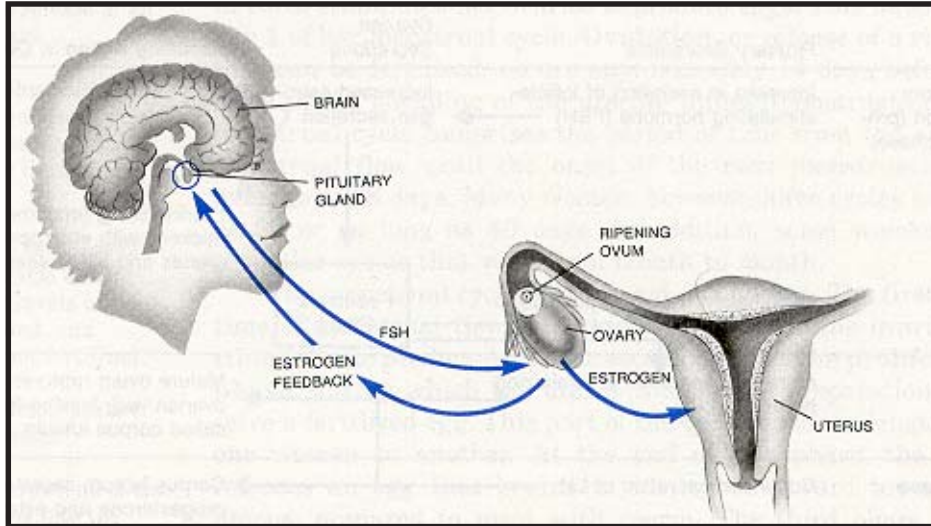
4. Progesterone: secreted by Corpus Luteum, adrenal cortex, and placenta. It is also called luteohormone and progestational hormone. Its function is to prepare the uterus for the reception and development of the fertilized ovum by transformation of the endometrium from the proliferative to secretory stage in order to maintain an optimal intra-uterine environment for sustaining pregnancy. U

EVENTS OF MENSTRUAL CYCLE

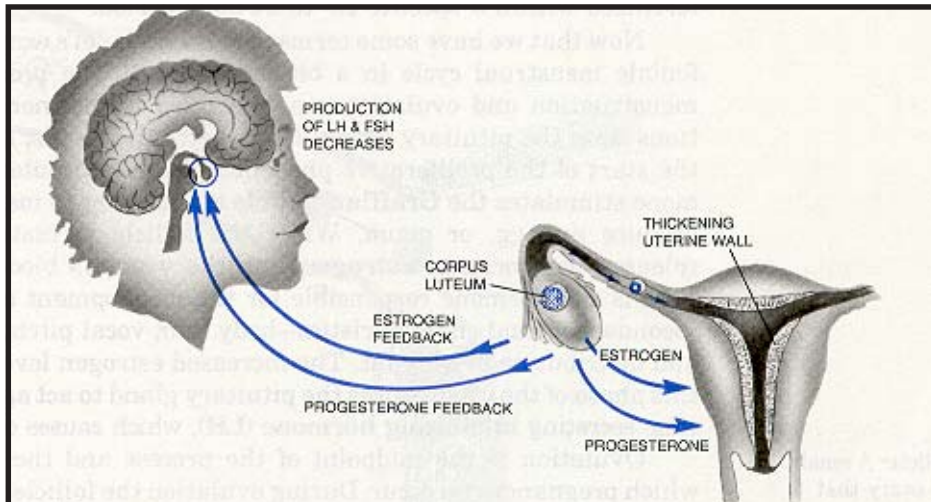




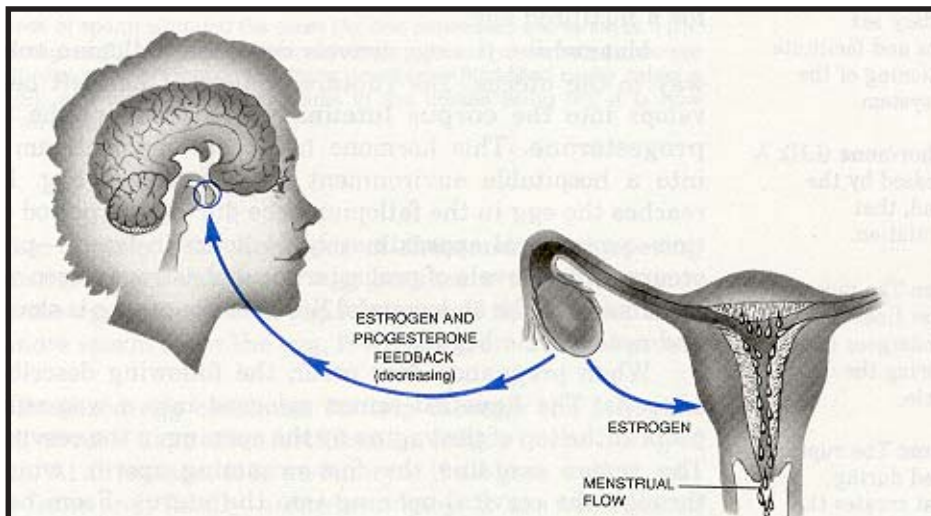
(A) Proliferative Phase



(B) Luteal Phase



(C) Menstruation





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Jane, MSF

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caseSTUDY



Jane, MSF

We would like to share with you this interesting case study of a five year old girl from a small village near the Thai-Burma border.

She (Pae Beh Beh) was admitted to a Mae La I.P.D. on 12th August 1998 following a four hour journey from her home town.

The history was given of three days fever and jaundice.

History of medication had been given prior to her admission.

12-8-98

1500 hr. Examination	Investigation	Medication
Drowsy	Hb 9.7%	Quinine 20 mg/kg I.V. (Loading)
Dose) Temp. 37	PFT 17.3%	Maintenance dose of 10 mg/kg
Enlarged liver	Dextrostix 120 Above all confirmed At 15 hr. Dextrostix remained 120 at 1800 hr.	commenced 2300 hr. Folic acid 5 mg 12 hrly I.V. D-10-250 cc 4 hrly

13-8-98

Fever persistent	P.F.T. 8.1%	Quinine continued.
Neck stiffness I.M.	Hb 7.3%	Phenobarbitone 70 mg
Jaundice Generalized edema	Dextrostix	given to prevent convulsion.
Lethargy Ampicillin Dark urine (size 8Fg foleys min catheter inserted) 1800 hr. T39	1900 hr. Hb 5.2%	commenced 200 mg I.V. Intra-nasal oxygen 2L/

14-8-98

T 37.5-39.5 Ampicillin contd.	Hb 5.3%	Quinine &
Jaundice Increasing	M.S. 4.6%	
Edema increasing Urine very dark	Dextrostix 120	



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<p>18-8-98 uH fyt&f yH&f qDQvmon? ow&vmon? ayygo&ufvmon? Edqay;aom emusifull tenfi, f wefyefvmon?</p>	<p>Hb 6.7% M.S. -ive (qvluJym;wGf iSufsm;yH raw@wmyG) aof twGf *vluJyGif_120</p>	<p>Ampicillin ay;jcif &yfclbn? EfnacjfyulubGf l E40 pD uH (2) em&Dcm;wGofay;clbn? Erythromycin 125 mg O.D.</p>
<p>19-8-98 tajctae rajymi fvtlyG</p>		<p>Quinine EShFusemide &yfclbn? Erythormycin ulquay;clbn?</p>
<p>20-8-98 xljcm;pH wHvubajymi fvt/ uH fyt&f yH&f ajymaompum;vHrsm;uH wefyefvncif/ t vlt avsmuf vy&G;rrsm;&D Efnacjfyulub, zw&ef, upm/ taxmuft uzihxH EHVm/ ygyfS t &nulLenfenfcsif plyhomufvMEHbn? opbDrsm;ullrdifSau;arfch &Hte&Hgjinfwb;jcif/ em;vnEHhompum; rajymao;yG</p>	<p>Hb 7.3% M.S. -ive</p>	<p>Erythormycin ulquay;clbn? Folic acid</p>
<p>21-8-98 EHum;r&GfD wefyef&vmon? ar;cf rsm;ullt elpyfqlajz-um;vncif</p>		



<p>1130 hr. Convulsion mg I.M. lasting 3 min. following which coma ensued Guedel's airway inserted</p> <p>Oral suction attended Via foot pump suction Urine output low</p> <p>1600 hr. further convulsion</p> <p>tone 70 mg I.M. The child remained in coma. Malaria treatment,</p> <p>18-8-98 Temp Normal Urine yellow serted</p> <p>milk 2 hrly Conscious state Lighting Slight response to painful Stimuli</p> <p>19-8-98 No change observed stop contd.</p> <p>20-8-98 Remarkable improvement Temp Normal Responding to spoken word</p> <p>Has spontaneous movement Attempting to move N.G.T. Supported in sitting position Tolerating sips of oral fluid. Fed fruit by mother! Moaning occasionally. No intelligible speech</p> <p>21-8-98 Alert and responsive Answering questions approximately</p>	<p>I.V. infusion and supportive measures continued.</p> <p>Hb 6.7% M.S.-ive</p> <p>Dextrostix 120</p> <p>Hb 7.3% M.S.-ive</p>	<p>Diazepam 7.5</p> <p>1300 hr. Blood transfusion of 300 cc</p> <p>15 hr. Fusemide 10 mg (moderate diuresis)</p> <p>2400 hr. phenobarbi-</p> <p>Ampicillin stopped Naso-gastric tube in- 40 ccs 2nd age</p> <p>Erythromycin 125 mg O.D.</p> <p>Quinine & Fusemide Erythromycin</p> <p>Erythromycin contd.</p> <p>Folic acid</p>
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Throughout her hospitalization full general nursing measures have been maintained with the willing assistance of family members & neighbors.

Nursing measures included as followed:

- Daily sponge for personal hygiene
- Tepid sponge for treatment of fever symptomatically
- Mouth care
- Eye care
- Passive limb movements
- Two hourly re-posturing to prevent pressure sores.

The 24 yr. old mother (who is 6 months pregnant with her third child) also received malaria treatment during this period (now completed). Her second child, a three-year old girl is M.S.-ive & appears well. The hospitalization has been extremely stressful for the mother, at times she has been too ill to care for her child. She felt obviously guilty having others to do so, as her husband is away working in Bangkok. Fortunately there has been considerable practical and emotional support from extended family, friends and neighbors.

22-8-98

Father arrived from Bangkok. Paw Beh Beh recognized him and conversed limitedly.

Although we are well aware of the serious neurological sequelae possible following such a severe case of malaria, with the patient being in a coma for 6 days, we are optimistic of a complete recovery.

23-8-98

Patient talking, smiling, eating.

Walking to Kalawar Tramu with arms outstretched for a cuddle.

Thanks to the diligence of the staff I.P.D. 1, the appropriate care given under the direction of Cho Cho Tun (Hospital Director) this delightful little girl was discharged home apparently well, and can look forward to a normal future.

Explanation:

1. Hb: measurement of Haemoglobin content in blood.
2. P.F.T.: blood film to check parasite Falciparum in Trophozoit form
3. Dextrostix-test: to know the quantity of sugar in blood.
4. M.S.: malaria smear: this test is to know if the patient is parasitized by which mosquito.



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Printed in Bangkok, Thailand.

Ten Questions

1. Shock from blood loss occurs when the amount lost is:

- (a) 100 ccs of blood
- (b) 1/3 volume of total blood in the body
- (c) the whole volume of blood
- (d) none of the above

2. Soil-transmitted worms are caused by:

- (a) swallowing contaminated eggs
- (b) from the blood
- (c) direct contact with the infected person
- (d) none of the above

3. Total RBC count is:

- (a) 7,000/mm³
- (b) 5,000,000/mm³
- (c) 250,000,000/mm³

4. Menstruation occurs:

- (a) When fertilized ovum is embedded in the uterus
- (b) When estrogen level rises
- (c) Pregnancy does not take place
- (d)

5. Hepatitis is caused by five viruses and transmission is:

- (a) fecal oral route
- (b) person contact
- (c) domestic animal bite

6. Function of platelets is:

- (a) To carry oxygen for development of tissues
- (b) To assist in clotting
- (c) In the body's defensive mechanism
- (d)

7. Origin of white blood cells is from:

- (a) Bone marrow
- (b) From blood
- (c) From hair

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| 1? (C) | 2? (u) |
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| 7? (c) | 8? (c) |
| 9? (*) | 10? (C) |

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Reference Books

1. **Anatomy & Physiology**
Seely, Stephens, Tate
2. **Wellness**
Robert E. Kime
3. **Synopsis of Human Anatomy & Physiology**
Kent M. Van de Graaff, Stuart Irafox,
Karen M. Lafleur
4. **Human Anatomy**
Robert Carola, John P. Harley

8. Blood type A contains an antibody:

- (a) directed against substance B
- (b) same substance
- (c) neither of them
- (d) substance of O

9. Enumerate the functions of plasma protein.

-
-
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10. Male sex hormone is Testosterone which is primarily responsible for:

- (a) Formation of sperm
- (b) Development of secondary sex characters at the onset of puberty
- (c) Development of body

Answers from Saytaman Issue-(1) -

- | | |
|--------|---------|
| 1. (d) | 2. (a) |
| 3. (c) | 4. (e) |
| 5. (b) | 6. (d) |
| 7. (b) | 8. (b) |
| 9. (c) | 10. (c) |

YOU WILL FIND THE ANSWERS IN THE NEXT ISSUE (NUMBER 2)

5. Tropical Diseases

P.E.C. Manson-bahe, D.R. Bell

6. Understanding Your Health

Payne, Hahn

7. Fundamental of Physiology

Lauralee Sherwood

8. Manual of Prehospital Emergency

Robert H. Miller, M.D., F.A.C.P.

9. The Maerk Manual, Sixteenth Edition

10. Harrison's Principle of Internal Medicine

C.D. Forbes, W.F. Jackson

Note:

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