Health Messenger 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 article for that topic in this issue.
Aide Medicale Internationale issues four magazines each year and this is the last issue for the year of 1998. We have introduced two new icons, Maternity and Child Health and Social topics since issue 1. We have tried to put a variety of topics which are relevant to one another and in some articles illustrations are added to help the readers understand a little more. Level of information is basic and simplified as much as possible.

The main objective of Health Messenger is to promote distance learning in such a way to disseminate health knowledge to all communities. We hope that all communities gain knowledge to access health. KNOWLEDGE (K), ATTITUDE (A) and PRACTICE (P): KAP, study in such a way will promote the implementation of new health system. Moreover, community participation and community involvement is also essential in implementation of health care program.

We consider this magazine, an effective tool for distance learning and we really appreciate the continued support of the readers. In future issues, Child to Child, an International program which teaches and encourages children to concern themselves with the health and welfare of others in the community will be introduced.

If you are a health worker, but not receiving Health Messenger, please write to us stating your name, position and address.

We are pleased to receive your cooperation and participation. Positive suggestions and advice are warmly welcome. Let us work together to create a healthy community.

Sincerely,

Editor

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Chief Editor
Alain CALOSCI

Printed in Bangkok, Thailand.
Skin

The largest organ in the body occupying almost two square meter of the surface area. It varies in thickness, color, elasticity, blood supply, and texture depending on anatomic location, age, state of nutrition, endocrinologic status, and race of the individual.

The skin has several layers:
1. The outer most layer, Epidermis
2. Dermis
3. Hypodermis (subcutaneous tissue)

1. Epidermis: consists of numerous layers of epithelial cells. The inner most layer is composed of cubical cells that are living and dividing where as the outer are dead and flattened. The epithelium has no direct supply but receives its nutrients from a rich blood supply from underlying dermis. It contains four resident cell types, Melanocytes, Keratinocytes, Lanerhans cells and Grasnstein cells plus transient T-lymphocytes. It contains melanin which give color to the skin. So, if people have a lot of melanin, their skin is dark and if they have not so much their skin is fair.

2. Dermis: or corium, is a connective tissue layer has many elastin fibers and collagen fibers. It has an excellent blood supply. It is divided into superficial and deeper layers. The appendages include sweat glands, sebaceous glands, hair follicles, arrectores pilorum and nails.

The presence of oil glands keep the skin soft and moist.

Sweat glands keep the skin cool by releasing water, salt.

Blood vessels for nutrition (food, O₂ water).

Nerve supply, sending messages to the brain and carry back informations to the muscle to move (pain sensation).

Connective fibers make the skin stretch and shrink, and also make it stronger.

Note: intra-dermal injections are given here. (I/D)

3. Subcutaneous tissue (Hypodermis): It is the layer below the dermis, it isn't the skin tissue. It is made of fat cells. It provides a cushion and protection for the body.

Note: subcutaneous injections are given here. (S/C)

Functions of skin

(A) Protection
The skin protects the body from the illness and injury.

The skin keeps harmful micro-organisms out, but if it is damaged the harmful micro-organisms enter the body and cause the disease.

(B) Sensation
The nerve in the skin sends message to the brain about temperature, touch, pain, change in our position.

(C) Regulation of temperature
Blood vessels in the skin help to control the body temperature, if the body temperature is up, the blood vessels dilate and if the body temperature is cool, the blood vessels constrict.

(D) Excretion
Means getting rid of waste, the skin is one of the ways for the wastes to leave the body.

Skin release water and salt.

(E) Absorption of sunlight
Sunlight helps to change a chemical in the skin to Vitamin-D which is needed in the bone growth.
ပရိုင်ဆိုင်မှုအကြောင်း ဆိုင်ရာတရားအပေါ် တိုက်ရိုက်လာသော စစ်ဆေးမှုများ ကြားမှု့စွာ ရှိသော မဲမာချမ်းမှုများသည် အာရှရှေ့တွင် သူတိုင်းများနှင့် ဆိုင်ရာတက်ရောက်ပြီး ကာလများစွာ ကြားမှု့စွာ သိမ်းပို့ခြင်းဖြစ်သည်။

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Galenics

| Chlorhexidine | ဗရာတနား | အခြေအနေ | အပေါ်အဆိုအပျက်
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Chlorhexidine</td>
<td>ဗရာတနားအတွက် အသိပေးချက်များ</td>
<td>အပေါ်အဆိုအပျက်</td>
<td>အပေါ်အဆိုအပျက်</td>
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(ဗ) မှန်ကန်သောအား

စစ်ဆေးမှုအကြောင်း ဆိုင်ရာတရားအပေါ် တိုက်ရိုက်လာသော စစ်ဆေးမှုများ ကြားမှု့စွာ ရှိသော မဲမာချမ်းမှုများသည် အာရှရှေ့တွင် သူတိုင်းများနှင့် ဆိုင်ရာတက်ရောက်ပြီး ကာလများစွာ ကြားမှု့စွာ သိမ်းပို့ခြင်းဖြစ်သည်။

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Local Treatments in Dermatology

By Jacques Pinel*

Local treatments are very popular among patients of countries affected by skin ailments since application of a lotion or pomade on a lesion is quite spectacular and logical.

Some basic rules of prescription of this type of treatment should however be kept in mind.

Director of Logistics, Medecins Sans Frontieres, Paris

1. Observance of directions for local treatment

Strangely enough, for many dermatological diseases or symptoms, overall treatment is often more effective than local treatment.

Example: nettle rash must receive a treatment through general route (antihistamine-based).

Galenics

should be used according to the type of lesion and to its localisation. Products:

- pomades: for dry lesions exclusively
- creams: for dry or weeping lesions in skin folds
- lotions: for scalp and weeping lesions in skin folds

Do not forget that pomades turn into oil in hot temperatures and, if possible, should be stored in a cool place.

2. All products in tubes, jars & bottles may get contaminated as soon as opened. All products opened for more than two weeks should systematically be thrown away.

Containers' capacity should thus be assessed according to use frequency so as not to waste product.

Do not forget that local products often entail a placebo effect, hence their success. It may however provide the desired result: for example, in case of chronic itching (pruritus) whose cause has not been determined or if the cause has been treated already, a local product such as Vaseline should be advised. It makes the skin greasy and thus reduces the pruritus. Moreover, this product has no side effects and is not very expensive.

I. Antiseptics

1. General rules

These products are used to disinfect healthy skin, before a medical act (vaccination, surgery, or wounded skin to avoid infection.

Soap is the primary antiseptic: to simply put soap and rinse with clean (but not sterile) water is often enough to disinfect a wound. This operation must always precedes application of antiseptics. The antiseptic aims at extending the effect of soap and at drying the wound to help it heal.

The choice of an antiseptic depends on whether it is used as a preventive or curative measure; where it will be applied (skin or mucous membrane), the type of infectious agent to fight; the patient's age (colourings are often used for children, for instance).

Two to three different antiseptics are far enough for medical treatments in dermatology. Within the same category of antiseptics, it is best to choose the cheapest one available locally.

2. Specific precautions

Do not apply two different antiseptics successively: risk of incompatibility, irritation or allergy.

Be cautious when diluting concentrated or powdered antiseptics: risk of skin burn and of toxicity (for young children) if the concentration is too high a risk of inefficiency if the dilution is too weak.

3. Various categories of antiseptics used in dermatology

Table No.1 Chlorhexidine and by-products

<table>
<thead>
<tr>
<th>Presentation/names</th>
<th>Advantages</th>
<th>Inconveniences</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorhexidine</td>
<td>Very efficient antiseptic</td>
<td>Be cautious with aqueous dilutions</td>
<td>Wounds disinfecting</td>
</tr>
<tr>
<td>Lathering, aqueous or alcoholic solutions</td>
<td>Active on certain fungus (Candida albicans)</td>
<td>Always rinse out after application of the lathering solution,</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medication</th>
<th>Description</th>
<th>Effect</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Candida albicans)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation/names</td>
<td>Advantages</td>
<td>Inconveniences &amp; precautions</td>
<td>Directions</td>
</tr>
<tr>
<td>--------------------</td>
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<td>------------</td>
</tr>
<tr>
<td>Septal*</td>
<td>The aqueous solution should be diluted with boiled water (5% to 20% dilution)</td>
<td>keeps away from light Possibility of a toxic effects if applied in the ears, to newborns and on mucous membranes</td>
<td></td>
</tr>
<tr>
<td>Hexomедine®</td>
<td>The alcoholic solution is easy to apply (colourless)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hibitane®</td>
<td>Cheapest version of the 20% aqueous solution</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Table No.2 70% Alcohol</strong></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Presentation/names</th>
<th>Advantages</th>
<th>Inconveniences &amp; precautions</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>70% alcohol</td>
<td>Easy to use and not expensive</td>
<td>Do not apply to mucous membranes or inflammable wounds</td>
<td>* Antisepsis of healthy skin prior to injection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Presentation/names</th>
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<th>Inconveniences &amp; precautions</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercurobutol</td>
<td>Efficient on most germs</td>
<td>Variable efficiency in case of wound Dangerous to associate with most other antiseptics (itching, frequent allergies)</td>
<td>* Not advisable unless local cost is much less than that of other antiseptics available</td>
</tr>
<tr>
<td>Mercurochrome®</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Presentation/names</th>
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<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen peroxide</td>
<td>Haemostatic effect</td>
<td>Do not use 20% hydrogen peroxide It colours clothes, tubs basins. Be extremely cautious when diluting this product or a toxic effects may arise. Skin dries up if applied more than 10 days in a row.</td>
<td>* Disinfecting of wounds * Haemorrhagic wounds for hydrogen peroxide K of K Permanganate bath for children's large wounds or eczema with secondary infection</td>
</tr>
<tr>
<td>Potassium permanganate</td>
<td>1/110,000h concentration (i.e. 1 bag for 5 litres of water) excellent tolerance among newborns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc peroxide</td>
<td>Healing effect</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Presentation/names</th>
<th>Advantages</th>
<th>Inconveniences &amp; precautions</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eosin (aqueous or alcoholic solution)</td>
<td>Excellent tolerance among children including newborns</td>
<td>Very dirty (avoid application on adults’ faces)</td>
<td>* Weeping wounds or dermatoses</td>
</tr>
<tr>
<td>Milian’s solution</td>
<td>Drying effect on weeping wounds</td>
<td>Risk of photosensitization</td>
<td>* Impetigo</td>
</tr>
</tbody>
</table>
(a) အကြီးအကျားအရွယ်ပိုများ စား၍ အစား၏ အစိုးရအနေဖြင့်

21 စာရင်းအချိန်:
- အမျိုးအစားရှိသော စားသောက်ပြုစားမှုကို သာမနာစေချင်း နောက်တစ်ဖက်သာမနာစေချင်းစားသော အရာများအဖြစ် အစိုးရအားလုံးကို အပြောင်းအလဲပေးခြင်း -
  • ကြိုးကလေးဘာသာစကားများကို သေချာစေချင်းစားသော အရာများအဖြစ် အစိုးရအားလုံးကို အပြောင်းအလဲပေးခြင်း (Millan's solution)
  • ဖြေရှင်းပြောင်းဖိုးကျော်စေချင်းစားသော အရာများအဖြစ် အစိုးရအားလုံးကို မြန်မာစာများချင်းစားသော အရာများအဖြစ် အပြောင်းအလဲပေးခြင်း (Gentian violet)

21 စာရင်းအချိန်:
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II. Local antibiotics

1. General rules
   - They are not replacement for all antibiotics, even in case of localised infections.
   - They often prove to be allergenic.
   - They are less efficient than most antiseptics when disinfecting a wound.
   - They are more expensive than antiseptics.

   From these observations, we deduce that antibiotics may be advised in very few cases only. Practically speaking, local antibiotics are used in prevention of ophthalmia neonatorum at birth (eye lotion or ophthalmic tetracycline-based pomade), and for treatment of bacterial conjunctivitis.

2. Precautions before use

   Creams and pomades are rapidly contaminated after opening and must be systematically thrown out after fifteen days of use.

   In case of skin infections (impetigo, furuncle, wound with secondary infection, infected ulcer), it is best - after having put soap and rinsed - to use a local antiseptic rather than a local antibiotic.

   In case of widespread impetigo, erysipelas, carbuncle, abscess, a general antibiotic (Penicillin M or Q) - usually associated to small surgery - should be administered.

III. Dermocorticoids

1. General rules

   In dermatology, they may be prescribed in limited cases such as:
   - eczema without secondary infection,
   - psoriasis (after cleaning with salicylated Vaseline),
   - lichenification (chronic skin thickening due to lengthy scratching)

   Unfortunately, they are often abusively used for other infections such as:
   - insect bites, nettle rash: antihistaminics through general route are the best treatment,
   - depigmentation: it is necessary to apply repeatedly dermocorticoids for several months which entails, sometimes irreparable, secondary effects (see Precautions before use).

   - pruritus: when confronted to any pruritus, you must think it may be a skin parasitosis (pediculosis, scabies) which application of dermocorticoids would make worse.

   Dermocorticoids are divided into four categories corresponding to various efficiency levels but also toxicity levels. Directions for each category must be strictly followed.

   Category I provides the strongest dermocorticoids, those with the highest risk of toxicity.

2. Precautions, secondary effects

   Secondary effects appear with repeated and prolonged application of dermocorticoids.

   (A) Skin secondary effects:
   - dermatitis (mainly among newborns)
   - skin atrophy
   - rosacea
   - scratch marks
   - worsening of acne
   - hypertrichosis (disgraceful growing of hairs among women and children)
   - healing slowness
   - risk of skin infection, worsening of a parasitosis.

   Skin infections and parasitosis must always be treated before dermocorticoids are applied.

   (B) Systemic effects:

   Risk is genuine if a highly efficient dermocorticoid (Categories I & II) is applied for a long period of time. This is particularly true for newborns and elderly people. Effects are the same as those observed with corticoids administered through general route (oedemas).

   (C) Precautions before use

   First of all, choose a dermocorticoid from category II for an adult, from category III for an infant or young child.

   Keep dermocorticoids from category I for adults' skin lesions, resistant to dermocorticoids
<table>
<thead>
<tr>
<th>Drug</th>
<th>Formulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Betamethasone</td>
<td>Topical Cream</td>
</tr>
<tr>
<td>Desonide</td>
<td>Topical Solution</td>
</tr>
<tr>
<td>Triamcinolone</td>
<td>Topical Cream</td>
</tr>
</tbody>
</table>

- Topical cream and solution are commonly used for skin conditions.
- In some cases, injection may be necessary for systemic effects.

**Note:** Detailed dosage and usage instructions should be followed for optimal treatment. Always consult a healthcare provider.
from higher categories and not localised on the face. Never apply a dermocorticoid from category I to an infant.

Upon improvement, continue the treatment with a dermocorticoid from category III for adults (or IV for infants and young children) or space out applications of the same dermocorticoid (once a day then once every second day). Never stop a prolonged dermocorticoid treatment suddenly (more than ten days) or relapse may follow, particularly with eczema.

IV. Antiparasitics
1. General rules
Do not undertake any antiparasitic treatment before having made sure that the individual and all others living under the same roof may be treated at the same time and have a shower or bath on the spot or at home. During treatment, clothes will also have to be changed.

2. Precautions before use
- Choose the antiparasitic and, above all, duration of treatment according to age: risk of toxicity for young children with prolonged treatment.
- Before asserting inefficiency of an antiparasitic, make sure that all necessary hygiene care (bath or shower, changing of clothes and linen) has been carried out by the whole family, at the same time.
- If hygiene care is made impossible by a lack of water (dry season), the antiparasitic treatment should be abandoned.
- If hygiene care is performed on the spot, do make sure that it is possible to disinfect the place (with Javel bleach diluted at 12%) between visits and at the end of the day.

See Table No. 7

Table No. 6 Dermocorticoids classification

<table>
<thead>
<tr>
<th>Categories</th>
<th>Examples</th>
<th>Contraindications</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Clobetasol 0.05%</td>
<td>- infants</td>
<td>- resistant psoriasis</td>
</tr>
<tr>
<td></td>
<td>(Dermoval®)</td>
<td>- face</td>
<td>- eczema (if not on the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- large surface</td>
<td>face) resistant to</td>
</tr>
<tr>
<td>II</td>
<td>Betamethasone</td>
<td></td>
<td>Desonides (category III)</td>
</tr>
<tr>
<td></td>
<td>Dispropionate 0.05%</td>
<td></td>
<td>- localised</td>
</tr>
<tr>
<td></td>
<td>(Diprosone®)</td>
<td></td>
<td>lichenification</td>
</tr>
<tr>
<td></td>
<td>Desonide 0.05%</td>
<td></td>
<td>- psoriasis</td>
</tr>
<tr>
<td></td>
<td>(Tridesonit®)</td>
<td></td>
<td>- eczema</td>
</tr>
<tr>
<td>IV</td>
<td>Hydrocortisone</td>
<td></td>
<td>- infant's eczema</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- eczema, facial psoriasis</td>
</tr>
</tbody>
</table>

Table No. 7 Antiparasitic products

<table>
<thead>
<tr>
<th>Names</th>
<th>Contraindications</th>
<th>Directions</th>
<th>Directions for use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzyl Benzoate 25%</td>
<td>Application on wounds</td>
<td>Scabies</td>
<td>Bath or shower for the whole family then application of the solution on the whole body (except the</td>
</tr>
<tr>
<td>အကျိုးရည်မှန်းများ</td>
<td>လေ့လာလွတ်မှုများ</td>
<td>အကြောင်းအရင်း</td>
<td>အမြင့်အမာ</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------------</td>
<td>-------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Benzyl Benzoate 5%</td>
<td>- အကောင်းဆုံး စက်မှ ကျပ်နေ</td>
<td>- အပိုင်း</td>
<td>- အပိုင်း</td>
</tr>
<tr>
<td>Benzochloril (DDT) 5%</td>
<td>- မော်တော် စုစုပေါင်း ကျပ်နေ</td>
<td>- အပိုင်း</td>
<td>- အပိုင်း</td>
</tr>
<tr>
<td>Peruvian Balsam (မြန်မာပိုင်သံ)</td>
<td>Peruvian Balsam 5%</td>
<td>- မော်တော် စုစုပေါင်း ကျပ်နေ</td>
<td>- အပိုင်း</td>
</tr>
<tr>
<td>Pyrethrins (Marie Rose, Spregal)</td>
<td>- မော်တော် စုစုပေါင်း ကျပ်နေ</td>
<td>- အပိုင်း</td>
<td>- အပိုင်း</td>
</tr>
</tbody>
</table>

**ဒီပါသော ပစ္စည်းများ**
- psoriasis (ကျောက်ခြင်း)
- ပင်လယ်ကြက်ကလေး သိမ်မှ ကျပ်နေ
- စီးရာအားလုံး ကျပ်နေ
- ကျပ်နေ အကောင်းဆုံး မီးအမှတ် (၇)
<table>
<thead>
<tr>
<th>Benzochloril (DDT) 6%</th>
<th>Children less than 3 years old</th>
<th>Scabies, lice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peruvian Balsam (in Vaseline)</td>
<td>Allergy to Peruvian Balsam</td>
<td>Scabies of infants aged less than 6 months</td>
</tr>
<tr>
<td>Pyrethrins (Marie Rose®, Spregal®)</td>
<td>Children less than 3 years old</td>
<td>Scabies, lice</td>
</tr>
</tbody>
</table>

For any anti-lice treatment, it is advisable to repeat the treatment after eight days so as to destroy larvae that hatched out in the meanwhile.

V. Miscellaneous

1. Healing substances
   See Table No. 8

2. Antipruritics
   Reminders: * The first cause for pruritus (itching) is scabies (and lice). Only the antiparasitic treatment offers permanent efficiency in this case.

Table No. 8 Healing substances

<table>
<thead>
<tr>
<th>Names</th>
<th>Contraindications</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sofra-tulle (Peruvian Balsam 1% in Vaseline)</td>
<td>Allergy to Peruvian Balsam</td>
<td>* Non-infected 1st &amp; 2nd-degree burns</td>
</tr>
<tr>
<td>Water paste</td>
<td></td>
<td>* Non-infected ulcers</td>
</tr>
<tr>
<td>Bioline®</td>
<td>Haemorrhagic wounds</td>
<td>* Non-infected wounds</td>
</tr>
<tr>
<td></td>
<td>Infected wounds</td>
<td>* Non-infected ulcers</td>
</tr>
</tbody>
</table>

* Non-infected 1st & 2nd-degree burns

* Non-infected ulcers

* Non-infected wounds

* Non-infected ulcers

* Non-infected 1st & 2nd-degree burns
(c) စွဲဆောင်ခြင်း

စောင်းထားသော အဖွဲ့အစည်း (စောင်း-၆ ကို ကျောက်၏)

မိုးကိုးလည်းကောင်းမှာ:

<table>
<thead>
<tr>
<th>စွမ်းဆောင်ချက်</th>
<th>ကြောက်ခြင်း</th>
<th>မိုးကိုးလည်းကောင်းမှာ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sofra-tulle (ဗီအားမားပျံ)</td>
<td>- Peruvian Balsam ကျောက် စောင်းမှု</td>
<td>- ကျောက်၏ အဖွဲ့အစည်းမှုမှု အဆောက်အဦး</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ကျောက်၏ အဖွဲ့အစည်းမှုမှု မားတော်</td>
</tr>
<tr>
<td>Water paste</td>
<td></td>
<td>- ကျောက်၏ အဖွဲ့အစည်းမှုမှု မားတော်</td>
</tr>
<tr>
<td>Biofine</td>
<td></td>
<td>- ကျောက်၏ အဖွဲ့အစည်းမှုမှု မားတော်</td>
</tr>
</tbody>
</table>

(စောင်း-၇ ကျောက်ခြင်း)

<table>
<thead>
<tr>
<th>စွမ်းဆောင်ချက်</th>
<th>ကြောက်ခြင်း</th>
<th>မိုးကိုးလည်းကောင်းမှာ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salicylated Vaseline</td>
<td>- ဗီအားမားပျံ</td>
<td>- psoriasis ကျောက် စောင်းမှု</td>
</tr>
<tr>
<td>(ညွှန်ကြားချက်</td>
<td>(ညွှန်ကြားချက်</td>
<td>(ညွှန်ကြားချက်</td>
</tr>
<tr>
<td>မီးပျံပျံ 0% နှင့် 50%)</td>
<td>ကျောက် စောင်းမှု</td>
<td>ကျောက် စောင်းမှု</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(စောင်း-၈ ကျောက်ခြင်း)

<table>
<thead>
<tr>
<th>စွမ်းဆောင်ချက်</th>
<th>ကြောက်ခြင်း</th>
<th>မိုးကိုးလည်းကောင်းမှာ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unidazole မီးပျံ-</td>
<td>Unidazole ကျောက်</td>
<td>- ကျောက်၏ အဖွဲ့အစည်းမှုမှု</td>
</tr>
<tr>
<td>Miconazole</td>
<td>Unidazole ကျောက်</td>
<td>- ကျောက်၏ အဖွဲ့အစည်းမှု</td>
</tr>
<tr>
<td>Econazole</td>
<td>Unidazole ကျောက်</td>
<td>- ကျောက်၏ အဖွဲ့အစည်းမှု</td>
</tr>
</tbody>
</table>

မိုးကိုးလည်းကောင်းမှာ:

- ပျံသုံးလျှင် မားတော် သုံးပြီး ကျောက်၏ အဖွဲ့အစည်းမှု အဆောက်အဦး |
- ပျံသုံးလျှင် မားတော် သုံးပြီး ကျောက်၏ အဖွဲ့အစည်းမှု မားတော် |
- ပျံသုံးလျှင် မားတော် သုံးပြီး ကျောက်၏ အဖွဲ့အစည်းမှု |

(စောင်း-၉ ကျောက်ခြင်း)

- ပျံသုံးလျှင် မားတော် သုံးပြီး ကျောက်၏ အဖွဲ့အစည်းမှု အဆောက်အဦး |
- ပျံသုံးလျှင် မားတော် သုံးပြီး ကျောက်၏ အဖွဲ့အစည်းမှု မားတော် |
- ပျံသုံးလျှင် မားတော် သုံးပြီး ကျောက်၏ အဖွဲ့အစည်းမှု |

(စောင်း-၁၀ ကျောက်ခြင်း)
Table No. 9 Keratolytics

<table>
<thead>
<tr>
<th>Names</th>
<th>Contraindications</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salicylated Vaseline</td>
<td>- Infants (for concentration over 5%)</td>
<td>- Cleaning of psoriasis or of any hyperkeratotic lesion (patches of hard skin) combined to pinicing (with a pumics stone or equivalent)</td>
</tr>
<tr>
<td>(salicylic acid in Vaseline from 1 to 50%)</td>
<td>- Allergy to salicylates (aspirin)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Application on mucous membranes</td>
<td></td>
</tr>
</tbody>
</table>

Table No. 10 Antifungals

<table>
<thead>
<tr>
<th>Names</th>
<th>Contraindications</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unidazoles by-products:</td>
<td>Allergy to Unidazoles</td>
<td>- Skin candidiasis (minimum 15 days)</td>
</tr>
<tr>
<td>Miconazole, Econazole</td>
<td></td>
<td>- Skin dermatophytosis (minimum 3 weeks)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Versicolour pityriasis (15 days treatment)</td>
</tr>
</tbody>
</table>

In case of mycosis, it is best to apply treatment by mouth (Amphotericin B, Fungizone®, Nystatin, Mycostatin®).
- The most efficient therapeutic way to fight pruritus is to take antihistaminics of Dexchlorpheniramine type (Polaramine®) through general route.
- Any pomade or cream made from zinc or titanium oxide as well as calamine may prove efficient.
- When prescribing pomades and creams, it is also worse remembering the importance of their placebo effect.
- The mere application of Vaseline may be enough to relieve pruritus.

3. Keratolytics
See Table No. 9

4. Antifungals
See Table No. 10

5. Depigmentation agents
Most are extremely toxic, particularly the cream called ‘Three Oriental Flowers’. Repeated application of this over a long period of time may result in burns, widespread skin detachment, non-homogenous depigmentation of the ‘leopard skin’ type. High blood pressure may also appear when stopping the treatment.

In conclusion, we may remember that local treatments in dermatology rely on precise directions and, in fact, rather limited in daily practice. Skin disease does not necessarily mean treatment directly applied to the skin.

A treatment through general route is often more efficient and eliminates the problem of preservation and contamination of local products.

Finally, we should not forget that primary hygiene care, with soap and water, is the prerequisite to any dermatological treatment. No cream, pomade or lotion can replace them.
Irritant dermatitis, presenting as hand dermatitis in a 39-year-old man. It resulted from exposure to irritant chemicals at work.

Guttate psoriasis in a 17-year-old. The condition resolved completely within a few months.

Lichenified eczema results from repeated scratching of lesions in eczematous patients.

Secondary infection in eczema. Patients with atopic dermatitis have defective cell-mediated immunity, and are more susceptible to bacterial, viral and fungal infections.
Acne vulgaris on the shoulders and back - another common site. Again, a wide range of lesions are seen, including some large pustules, and scarring is occurring on healing.

Seborrhoeic dermatitis in infancy. Napkin rash is associated with scattered erythematous patches on the abdomen, trunk and head and neck, but the extremities are spared.

Stasis eczema is commonly seen in elderly women, in association with venous insufficiency or frank ulceration.

Infantile eczema in a dark-skinned child, affecting the face, neck and trunk. In a light-skinned child, the lesions are pinkish rather than bluish in colour.
**готовитесь к детородной функции:**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>months</td>
<td>8 months</td>
<td>7 months</td>
<td>6 months</td>
<td>5 months</td>
<td>4 months</td>
<td>3 months</td>
</tr>
</tbody>
</table>

**Нормально волной**

will be 2 fingers higher each month.

At 4 1/2 months it is usually at the level of the navel.
Pregnancy

The condition of having a developing embryo or fetus in the body after union of an ovum and spermatozoa. Duration of pregnancy is about 266 days.

Detection of pregnancy is by signs:
- cessation of the menses (Amenorrhea)
- increased urinary frequency
- fatigue and irritability
- nausea on arising in the morning (morning sickness)
- enlargement of breasts and pigmentation of the nipples
- blue discoloration of vaginal mucosa
- progressive enlargement of abdomen
- the absolute sign is fetal movement, fetal heart sound
- confirmation of fetus by x-ray and ultrasound

Pregnancy is tested by detection of hCG (human chorionic gonadotrophin) in urine.

Pregnancy test may show false-positive results sometimes.

How to assess pregnancy?
1. Last menstrual period (LMP). The first day of the last normal menses is the traditional starting point for assessing pregnancy. The estimated date of delivery (EDD) is derived through Nagele's rule: subtract 3 from the month and add 7 to the day of the LMP.
   e.g. LMP of 14/11/98
   EDD = 21/8/99
   This method will give accurate dates with regular 28 day cycle.
2. These milestones are group of signs that helps to calculate EDD.

Uterine size
(a) 12 weeks at the pubic symphysis
(b) 20 weeks at umbilicus
(c) 28 weeks, fundal height 28cm

Advantages of breast feeding
1. Immunologic:
   Breast milk contains several immunologically active substances that have been shown to result in a decreased incidence of gastroenteritis, otitis media, respiratory illness in breast fed infants compared to bottle-fed infants.

2. Better nutrition:
   Breast milk contains protein than formula, producing decreased renal solute load to relatively immature kidney of the newborn. The fat in breast milk is more digestible and calcium absorption is better because of a favourable ratio of calcium to phosphorous. Iron bio-availability is superior to that of the formula as well. The composition of breast milk changes as the child grows so that infant nutrition is optimal throughout infancy. Additionally there is a decreased prevalence of obesity in breast-fed infants, with potential lifelong benefits.

3. Less expensive and more convenient.

4. Psychologic advantages:
   Mother-infant bonding is enhanced by nursing which is something a mother can do for the infant that others cannot.

5. Physiologic advantages:
   Lactation leads to oxytocin production, which improved postpartum uterine involution.

Health Messenger
Embryonic and Fetal Development

1 Month
Embryo is 1/2 inch long.

2 Months
Embryo is 1 inch long and weighs 1/10 ounce.

3 Months
Fetus is 3 inches long and weighs 1 ounce.

4 Months
Sex organs are fully formed. Fetus is 7 inches long and weighs 5 ounce.

5 Months
Fetus is 12 inches long and weighs 14 ounces.

6 Months
Fetus is 14 inches long and weighs 2 pounds.

7 Months
Fetus is 16 inches long and weighs 3 pounds.

8 Months
Fetus is 17 inches long and weighs 5 pounds.

9 Months
Fetus settles into position for birth. Neonate is 21 inches long and weighs 7 pounds.
The health game
“Snake & Ladder”

Rules of the game

You need at least two players but many more can join if you use a large board.

Players are represented by pieces of different shapes and colours. You need a dice or anything else that will allow you to toss up a figure from one to six (six soda or beer bottles’ caps may be used: throw them on the table or on the floor and count those showing the side of your choice).

Each player puts its piece on the “Start” and throws the caps in his turn. Following the numbers shown in the squares, he then moves his piece according to the figure indicated by the caps.

If you stop on a square occupied by another piece, you take its place and put it back to the “Start”. If you stop on a square containing the bottom of a Ladder, you may ‘climb up’ (if you reach square 12, you can go as far as square 46 at once). On the other hand, if you stop on a square showing the mouth of a Snake, you are ‘gulped’ and must climb down to his tail (from square 26 to square 4, for instance).

The first one to reach the “Finish” wins but be careful, to reach it, you need the accurate figure or else, you have to move back.

This game is education-oriented and contains therefore ‘good squares’, from which start the ladders, and ‘bad squares’, those showing the snakes’ heads. All of these squares give messages that must be read and commented as the game goes along.

The leader must not only make sure that players do not go too fast but also take advantage of the game to improve their knowledge.

Every leader creates his own gameboard according to the messages he intends to put through. Written messages may be replaced by drawings (a breast-feeding baby, a baby’s bottle...). The leader may ask children to help him and draw the Game for themselves or for younger ones.
The structure of the breast

(a) A sagittal section and
(b) an anterior view partially sectioned.

![Diagram of the breast](image)
Lactation

Lactation is the production of milk by the mother's breasts (mammary glands). It normally occurs in female's parturition and continues for 2-3 years provided sucking occurs often and regularly.

During pregnancy the high concentration and continuous presence of estrogens and progesterone cause expansion of duct system and the secretory units of the breasts. The other hormones include growth hormone, prolactin, thyroid hormones, glucocorticoids and insulin.

Prolactin is responsible for milk production. Milk production is inhibited during pregnancy because of high levels of estrogen and progesterone.

For the first few days after birth the mammary glands secretecolostrum which contains little fat and lactose than milk.

Mechanical stimulation of the breasts produces nerve impulses in turn will release the milk and this process is called milk letdown.

The crying of a baby can elicit oxytocin secretion and the milk ejection reflex. The reflex can be suppressed by flight or fight reaction. Thus, if a woman becomes anxious while breast feeding, she will produce milk but it will not flow. A quiet and calm environment is conducive to successful breast feeding.

Hormonal control of lactation. Stimulation of the nipple by the baby's suckling initiates action potentials in afferent neurons that connect with the hypothalamus. The hypothalamus stimulates the posterior pituitary to release oxytocin, which stimulates milk release from the breast, and the anterior lobe to release prolactin, which stimulates additional milk production.
The resting position of Culex quinquefasciatus (below), Anopheles sinensis (centre) and Anopheles gambiae (above).
Mosquitoes

The main genera Anopheles, Aedes Culex are distributed worldwide.

The adult mosquitoes of both sexes feed on nectar and other fluids. Anopheles and culex females also suck blood of mammals, birds and frogs. For blood feeding the proboscis are pushed into a blood capillary of the host skin. Localized sensitivity occurs in skin by mosquito bites. Through regular attacks on human, female mosquito of certain species are carriers of human diseases.

All vectors of human malaria belong to genus Anopheles and Culicines transmit arboviruses and filariasis to man.

Breeding places of mosquitoes are always in water. There are four stages in mosquito development.

Stage-1

After copulation fertilized eggs are laid. Eggs are deposited on damp soil, in tree holes or containers. Decreasing oxygen concentration favours the hatching of eggs.

Stage-2

Larval development takes about one week for most tropical mosquitoes, but many temperate species stay over winter as larvae. The fourth stage larvae moults to the pupal stage, from which the adult mosquito emerges after a few days. Larvae breathe air through a pair of spiracles which is not seen in Anophelines.

Stage-3

Pupae breathe air through a pair of trumpets. The majority of the mosquitoes larvae have mouth parts adapted for filter feeding. The diet of mosquitoes larvae comprises of micro-organism and detritus. Growth rate of the mosquito is influenced by many environmental factors. Pupa rest beneath the surface of water preparing for metamorphosis. Pupae do not feed.

Stage-4

Pupa split along the back and adult mosquito works its way out on to the water surface. Wings and legs become extended. The adult female flies to shelter and rest for several hours.

Mosquito possess sensitive organ to detect host. Majority of them hunt at night, but some in day time. Mosquitoes stay in houses or animal sheds. It is important to know that mosquitoes may rest outdoors after feeding or vice versa. Male and female mosquitoes are good fliers, they can sometimes fly over many kilometers. The differentiation among the species is a special work. Specific points to take into consideration is: size, general coloration, color of erect scales on the head, pattern of pale scales on the generally dark legs, wings and so on.

Control or eradication of mosquitoes is the key factor in disease prevention program. DDT, Malathion, Fenitrothion, and Carbamate insecticides are used for house spraying.
(a) ဆီလိုချင်ထားသောအတိုင်းအတား

ဗိသုကာပညာရပ်များကို ဆီလိုချင်ထားသောအတိုင်းအတားသို့ ပြောင်းလဲခြင်းဖြင့် အရာအားဖြင့် နားလည်ကြည့်ရှုနိုင်သည်။ နားလည်ကြည့်ရှုသောအတိုင်းအတားအတွက် အရာအားဖြင့် နားလည်ကြည့်ရှုနိုင်သည်။

(b) ဆီလိုချင်နေသောအတိုင်းအတား

ပညာရပ်များကို ဆီလိုချင်နေသောအတိုင်းအတားသို့ ပြောင်းလဲခြင်းဖြင့် အရာအားဖြင့် နားလည်ကြည့်ရှုနိုင်သည်။ နားလည်ကြည့်ရှုသောအတိုင်းအတားအတွက် အရာအားဖြင့် နားလည်ကြည့်ရှုနိုင်သည်။

(c) ဆီလိုချင်ပြုလုပ်သောအတိုင်းအတား

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(d) ဆီလိုချင်ထားသောအတိုင်းအတား

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(f) ဆီလိုချင်နေသောအတိုင်းအတား

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Overview of the Field of Pediatrics

Hepatitis

A. Generalities

Viral hepatitis is a major health problem in all countries. Five viruses are now known to cause hepatitis: these hepatotropic viruses are responsible for Hepatitis A,B,C,D, and E.

But many others can cause hepatitis including herpes simplex, cytomegalovirus, varicella, rubella, adenoviruses, enteroviruses and arboviruses; however hepatic involvement with these viruses is usually only one component of the disease. The five viruses are a group of viruses that cause similar acute clinical illness.

Hepatitis A,C,D,E are RNA viruses, containing ribonucleic acid, composed of ribose (a five-carbon sugar), a phosphate group and a nitrogenous base. They represent four different families. Hepatitis B is a DNA virus, containing deoxyribonucleic acid that also constitutes the genetic materials of all cells. Only Hepatitis B, C, D cause important morbidity and mortality through chronic infections.

B. Hepatitis-A

Hepatitis A virus (HVA) appears to cause most cases of hepatitis A in children. It is a member of the Picornavirus family containing RNA. Acute infection is diagnosed by radio-immunoassay, a highly and specific assay method ( assay method is used to the determination of the amount of a particular constituent in the blood.) or rarely by identifying virus in stool. In developing countries, the prevalence rate approaches 100% in children by the age of 5 years. Hepatitis A causes only acute hepatitis but most infections in children younger than 5 years have mild nonspecific manifestations.

The transmission of HVA is almost always by person-to-person contact; spread is predominantly by the fecal-oral route. HVA infection during pregnancy does not appear to result in complications of pregnancy or clinical disease in the newborn. The inactivity of saliva, urine and semen is unknown. Common source, food-borne and water-borne outbreaks have occurred including several resulting from contaminated shellfish. Fecal excretion of the virus occurs late in the incubation period and is minimal after the onset of jaundice. The mean period of incubation for HVA is about 4 weeks.

Pathology

The entire liver is involved with necrosis, most marked, is the centrilobular area. The lobular architecture remains intact. Necrosis of parenchymal cells occurs initially. Fatty change is rare. A diffuse mononuclear cell inflammatory reaction spreads in the portal tracts; bile duct proliferation is common but without damage.

Hyperplasia of Kupffer’s cells is present. Neonates respond to hepatic injury by forming giant cells. By 3 months after the onset of acute hepatitis A, the liver usually is morphologically normal. Other organs systems can be affected during HVA infection: regional lymph nodes and the spleen may be enlarged.

The bone marrow may be moderate hypoplastic (marked by underdevelopment of this organ, it is less severe in degree than aplastic which is the result of underdevelopment of the organ) Lesions of the gastrointestinal tract occur rarely, especially in fatal cases. As well pancreatitis, myocarditis and aplastic anemia has been reported exceptionally.

Clinical Manifestations

The onset is abrupt:
- fever
- nausea emesis (act of vomiting)
- anorexia (loss of lack of the appetite of food) and
- abdominal discomfort.

These complaints often are unnoticed in infants and children younger than 5 years. Diarrhea is more common in children than constipation.

Jaundice, in most cases, can be detected only by laboratory test. The duration of the symptoms usually is less than one month and feeling of well-being return gradually. Almost all the patients with HVA infection will recover completely; a relapsing course may occur for several months but chronic disease does not occur.
Diagnosis

The diagnosis is easy if HVA infection exists in family contacts of the child. Anti-HV antibodies are detected at the onset of symptoms of acute hepatitis A and persist for life.

The acute infection is diagnosed by the presence of IgM anti-HVA (Ig = immunoglobulins, are any of the structurally related glycoproteins that function as antibody. The five classes are designated by IgM, IgG, IgA, IgD, IgE.) which can be detected for 3-12 months. Thereafter IgG anti HVA is found. The virus is excreted in stools from 2 weeks before to one week after the onset of illness.

Differential Diagnosis

Physiologic jaundice, hemolytic disease and sepsis (sepsis = presence in the blood of pathogenic micro-organisms of their toxins) in neonates usually are distinguished easily. After the immediate newborn period, biliary atresia and choledocal cysts must be considered. Into the infant’s diet, introduction of pigmented vegetables may result in carotenemia which may be mistaken for jaundice. In later infancy and childhood, hemolytic-uremic syndrome may be mistaken initially for hepatitis A.

Jaundice also may occur in Malaria, Leptospirosis and Brucellosis, in severe infection in the older children with immunodeficiency. Gallstones may obstruct biliary drainage and cause jaundice in adolescents. Medications including Paracetamol overdose, Valproic acid can be associated with an hepatitis-like picture. Drugs well tolerated in healthy children may cause hepatic dysfunction in children with illnesses.

Prevention

Safe formalin killed vaccines mark a major advance in the prevention of hepatitis A. Vaccination of younger children in endemic areas is unnecessary because the disease is almost always asymptomatic. Enteric precautions should be observed for infected patients who are incontinent of stool or in nappy: careful hand-washing is necessary after changing the patients.

Stools and fecally contaminated materials should be treated with precautions. Persons infected with HVA are contagious for about one week after onset of jaundice. Immunoglobulin prevention is not recommended routinely for sporadic exposures but mass administration of Ig can be used when epidemic has been school centered.

When HVA occurs in an IPD with children not yet toilet trained, Ig should be administered to all children, to family members if child is in nappies, and it is advisable to administer to the medical and maintenance person.

Note

Hepatitis B, C, D

• cause important morbidity and mortality through chronic infections.

Hepatitis A, E

• person-to-person contact
• spread is predominantly by the fecal-oral route.
Note

1. Brushing after each meal.
2. Rinse your mouth with water.
3. Snacking on vegetables and fruits.
4. Sipping water.
Healthy Habits for Bad Breath

Bad breath, medically known as Halitosis, may be the result of a number of factors. It is not necessarily caused by something you ate at your last meal.

Bad breath is caused by substances which have been ingested or inhaled and partly excreted by lungs; and by food particles left in your mouth which become fermented by bacteria.

Gingival or dental disease and tonsillitis can also be the causes of bad breath. Some diseases can also be the causes such as diabetes, liver diseases, ulcers, infections of respiratory tract and sinuses. Gastric and esophageal tumors can cause malodorous breath. It is not true that breath odor reflects the state of digestion and bowel function.

The smoke from cigarettes and cigars can cause an "off" odor in your mouth as well as clothing, hair, and environment. Alcohol also causes bad breath.

We know that onions and garlic as well as scallions, leeks, shallots and chives can certainly give us bad breath.

Snacking on sugary foods is more likely to lead to bad breath than munching on carrot sticks or crackers. The bad breath bacteria in your mouth feast on the sugary residue left behind and on any food particles caught in the teeth, dentures and braces.

A dry mouth leaves you susceptible to odor causing bacteria. Not drinking enough fluid during the day can lead to dry mouth. The best snacks that stimulate saliva are pomelo, oranges and citrus fruits and vegetables. Exercise and stress may cause dry mouth which produce the same effect.

Keep your mouth moist by sipping water throughout the day. Sipping on sugary drinks can promote tooth decay and bad breath.

Best way to prevent bad breath is practising good dental hygiene. That means brushing after each meal. If brushing is impossible, rinse your mouth with water. Teeth and dentures should be cleaned at least twice a day.

You should not only worry about teeth but also a clean tongue is important. So, during brushing tongue should be cleaned also.

In conclusion dental hygiene, snaking on vegetables and fruits, not smoking, limiting alcohol and sipping water will bring healthy habits that benefit your body and your teeth. *
မေးခွန်း:

- ကျန်းမာရေး ဆောက်လုပ်မှုတွင် ဆက်စပ်နေသော နေရာတွင် သိရှိနိုင်သော အချက်အလက်များ
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စာပိုဒ်:

- အားလေ့လာအချက်အလက်များ
  - (၁) အကြောင်းအရင်း
  - (၂) တောင်းဆိုချက်

- ဆောက်လုပ်ရေးအချက်အလက်များ
  - အားလေ့လာရေးအချက်အလက်များ
  - သင်ကြားသော အချက်အလက်များ
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  - အရေးယူချက်အလက်များ
  - AIDS ဆောက်လုပ်ရေး အချက်အလက်များ
  - ကြေညာချက်
  - တွေ့ရှိချက်
  - အရေးယူချက်
  - အရေးယူချက်
Blood Transfusion

In medicine the procedure of introducing the blood of a donor or blood pre-donated by the recipient into the blood stream. It is highly effective form of therapy and has saved the lives of incalculable numbers of people suffering from shock, hemorrhage, or blood disease. Transfusion is employed routinely in cases of surgery, gastrointestinal bleeding, and in childbirth that involve great loss of blood.

After discovery of the major blood groups and introduction of blood typing, transfusion became routinely successful.

Types of transfusion:
1. Whole blood transfusion
   (a) from donor
   (b) Autologous transfusion (autotransfusion)
2. Red blood cell
3. Granulocyte transfusion
4. Platelet transfusion
5. Plasma transfusion

Following examination and a history should be taken before transfusion:
- Testing of Hb
- Temperature of the person who is going to donate blood
- Pulse rate
- Blood Pressure
- History of hepatitis
- Heart disease
- Malignancy
- Severe asthma
- Bleeding disorders
- Convulsion
- AIDS or in AIDS risk group
- Malaria
- Pregnancy
- Major surgery
- Hypertension
- Hypotension
- Anaemia
- Drug users

Indications for Clinical use of blood and its components
- Massive blood loss, severe Anaemia
- Exchange transfusion
- Severe thrombocytopenia
  (e.g. platelet count<10,000/µl)
- Profound neutropenia (WBCs<500/µl)

Following should be done before transfusion:
- Typing and matching of blood group (ABO and Rh typing), cross matching,
- A test for hepatitis B surface antigen and core Ab (Anti-HBc)
- Human immuno-deficiency virus
- Malaria smear

The standard donation is 450 ml, taken into a plastic bag containing adenine supplemented citrate phosphate dextrose (CPDA-1). Blood can be stored for 35 days under refrigeration. Stored whole blood differs considerably from circulating blood. Changes that occur during storage are collectively referred to as the "Storage lesion". Some changes may affect certain recipients.

Steps to remember in transfusion
Before any transfusion is started both the label and report of compatibility testing must be checked to ensure that the blood is indeed for the patient concerned..., that it is.

During transfusion close observation is important for the first 15 min, since more severe reactions are evident by then.

The patient should kept warm and well covered to prevent chills that might otherwise be interpreted as a reaction. Elective transfusion should be discouraged at night.

If any reaction appears transfusion should be stopped and further transfusions are discouraged until the cause of reaction is known.

Complications of transfusion
All transfusion reactions should be investigated and reported in writing. Minor reactions like allergy and severe reactions like hemolytic reactions must be carefully noted.
Febrile reactions like chills, fever with a rise of one degree C and headache, back pain, may progress to cyanosis and shock.
- Allergic reaction
- Circulatory overloading
- Air embolism
- Disease transmission such as Hepatitis, AIDS, Bacterial infection, Malaria, Syphilis.

| The agglutination (clumping) of red blood cells occurs when cells with A-type antigens are mixed with anti-A antibodies and when cells with B-type antigens are mixed with anti-B antibodies. No agglutination would occur with type O blood (not shown). |
|---|---|
| **Anti-B** | **Anti-A** |
| Type A | ![Image of Type A agglutination](image1) | ![Image of Type A agglutination](image2) |
| Type B | ![Image of Type B agglutination](image3) | ![Image of Type B agglutination](image4) |
| Type AB | ![Image of Type AB agglutination](image5) | ![Image of Type AB agglutination](image6) |

Blood transfusion can be a dangerous skill. It must always be done under the medical control.
To the readers

The following questions will cover issue 0 to 3. We would like to know how much you learn, so please return your answers to the following address before 10/2/99. Answers can be sent with separate papers, stating your name, position and address.

Health Messenger Magazine Program: (Q & A)
117/9 Sukhumvit Sol 4,
Sol Samaharn, Klongtoey,
Bangkok 10110 Thailand.

Those who achieve 60 marks will receive a present.

1. Write short notes on causes of Diarrhea.

2. Write important points to note in treatment of re-hydration.

3. Write health education information regarding Diarrhea.

4. What are the points to note during drug administration?

5. Write down the points to diagnose D.H.F.

6. What are the complications of worm infestation?

7. Write a few lines about the functions of WBCs.

8. Write notes on hazards of blood transfusion.

9. Write down the roles of hormones in menstrual cycle.

10. Why skin is important in the body's systems?

11. (A) If L.M.P. is 20/12/98
    E.D.D. = ---------

    (B) State the differences of breast feed and bottle feed.

12. (A) Notes on Differential Diagnosis of Jaundice.
    (B) Name the diseases caused by Mosquitoes.
## Contents of previous issues

### Issue-0:
- Diagnosis of Diarrhea
- Shigellosis: the most common bacterial dysentery
- A closer look at Diarrhea
- Treatment of severe & moderate dehydration
- A near catastrophe, averted
- Teaching Health
- Eight measures to prevent Diarrhea

### Issue-1:
- Drug administration
- The six mistakes in drug administration
- Medical dictionary
- The body's absorption of alcohol & oxidation
- Lower jaw joint disease
- Furuncle of nasal vestibule
- Dengue Haemorrhagic Fever
- Platelet and thrombocytopenia
- Auscultation of the heart
- The mother's health care after childbirth

### Issue-2:
- Medical dictionary
- How about worms?
- Soil transmitted worms
- Blood
- Male reproductive organs
- Female reproductive organs
- Menstrual cycle
- Case study

## Answer for Issue-2

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9.  - 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
    - immunoglobulin for body's defense mechanism
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• Female reproductive organs
• Menstrual cycle
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Answer for Issue-2

1. (b)  2. (a)  3. (b)  4. (c)
5. (a)  6. (b)  7. (a)  8. (a)

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Distance Learning Health Magazine