



Basic
Concept of

Hydrotherapy

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JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR

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General rules of hydrotherapy:

1. The curative force resides in the body itself.
2. Physician has to provide such a treatment which aids the natural forces of the body in combating the disease.
3. The physician should first find out the root cause of disease.
4. Before starting treatment check the condition of heart, nervous system, liver, etc. So that all the contraindications can be ruled out.
5. Patient should be given treatment according to their physical and mental condition.
6. Before any treatment, blood examination, urine examination should be done.
7. Check all the vital organs.
8. Check the condition of brain like hyperemia, congestion.
9. According to Kellogg, he has emphasized on checking the condition of heart, condition of major and minor blood vessels and condition of vital organs should be checked before treatment.
10. Check the constitution of a person.
11. The lower the temperature of water, shorter should be the application i.e., 1 to 5 sec to 10-30 sec.
12. Very hot application should be of moderate length i.e., around 1 min.
13. Tepid or neutral application should be prolonged i.e., 30 min to 1 hour.
14. Best effects are obtained by giving short cold application with repetition.
15. Prolonged cold treatment produces strong reaction and ultimately a sedative or exhaustion instead of tonic, especially in emaciated/ weak patient (exhaustion of nervous system).

ADAPTATION OF A PERSON TO TREATMENT:

1. Adaptation of a person to a treatment solely depends upon the internal vital conditions of the patient.
2. Treatment can be altered to suit the ability of the patient condition for example: if the internal condition is normal, any type of treatment can be prescribed as the sensitivity of the patient is more significant (treatment can be better adopted)
3. Individual response of the patient can be done by sensibility of patient is more significant (treatment can be better adopted).
4. By giving graduated bath
5. By using extremes of temperature, physician should be aware of psychological state of patient to accustom the patient to the particular temperature.

THERAPEUTIC SIGNIFICANCE OF REACTION

- Action is the immediate effect produces following an application.
- Reaction is the secondary effect produced in the body after withdrawal of an application or it is a series of vital processes taking place in the body.
- The physician should thoroughly understand the phenomenon of reaction under physiological and pathological state of a patient before giving any treatment.
- It is also very important that each patient should be carefully studied about his ability to react to any hydrotherapeutic procedures in the beginning as well as the reaction seen in the whole system in each application daily.
- These reactions should be carefully noted and any necessary readjustment after prescription should be made.
- The hydratic application should be made under strict supervision of a doctor.

THE INTENSITY OF REACTION DEPENDS UPON:

1. Method of application
2. Temperature of water
3. Duration of application
4. Condition of patient
5. Ability to develop animal heat
6. Ability to repair quickly loss of heat and to support its loss without serious inconvenience.
7. The condition of nervous system at the time of application
8. Whether the patient is accustomed to cold treatment
9. Mental status of patient

UNTOWARD REACTION/ EFFECTS

Discomfort or uneasiness because of hot or cold application to skin or mucous membrane is called as untoward effects.

It may be due to incomplete reaction.

This leads to symptoms like:

- Headache
- Giddiness
- Fever
- Irritability
- Insomnia
- Vomiting
- Chillingness

1. HEADACHE:

Due to extreme hot/cold application, due to prolong duration of treatment, lower vitality or may be due to incomplete reactions.

Immediate Action to be taken:

- Treatment should be immediately stop
- Patient is made to drink water and relax
- If headache is due to hot application – ice application to head and nape of the neck is given
- If headache is due to cold application – hot foot bath is given

2. VERTIGO/ GIDDINESS:

This happens generally due to loss of balance usually seen when very hot application is made to weak or old age patient.

- Immediate care should be taken, if patient had severe vertigo and sweating.
- Cold towel rub to the head can be given.

3. FEVER:

Weak or old age patient when given short very cold application can have fever.

- Immediately stop the treatment
- Wrap the patient in warm clothing
- Sponging with friction
- Give hot fomentation to foot for producing perspiration

4. INSOMNIA:

Too much of exciting reaction in the evening time can produce insomnia. (short cold, alternating application or moderate cold application).

- Give hot foot bath which has sedative effect during evening.

5. IRRITABILITY:

It may be due to improper skin condition, neural involvement or muscular irritation.

This may be due to improper examination of patient's skin condition.

- Stop the treatment immediately
- Give warm or tepid baths
- Avoid short cold douches

6. HYPERSENSITIVITY TO COLD:

It may occur in old age or young children or in some psychological patient.

This has to be ruled out before hand and avoid cold application.

7. PAIN:

Pain may occur in rheumatoid arthritis or in any arthritic condition.

It may be due to incomplete reactions.

- Stop the treatment and go for hot application like heating compress or hot fomentation.

8. CHILLINGNESS:

It may be due to excessive heat loss or improper thermoregulatory system.

If patient is not prepared to that particular treatment.

Immediately give hot applications to the patient.

9. NAUSEA AND VOMITING:

It may be due to prolonged hot application or in weak patients during cold application

- Bring patient out of treatment, relax him/her
- Make the patient to drink ice cold water sip by sip.
- Ice cold compress over abdomen
- Cold compress over head.
- If nausea and vomiting is due to cold application, then warm the patient first and then follow the above mentioned steps.

HYDRIATIC EFFECTS

General Principles:

The general principles can be categorized as the effects of hot, cold and neutral.

Effects of any application are determined by:

- Mode of application
- Temperature of water
- Duration of treatment
- Physical status/ condition of patient

EFFECTS OF HOT APPLICATION:

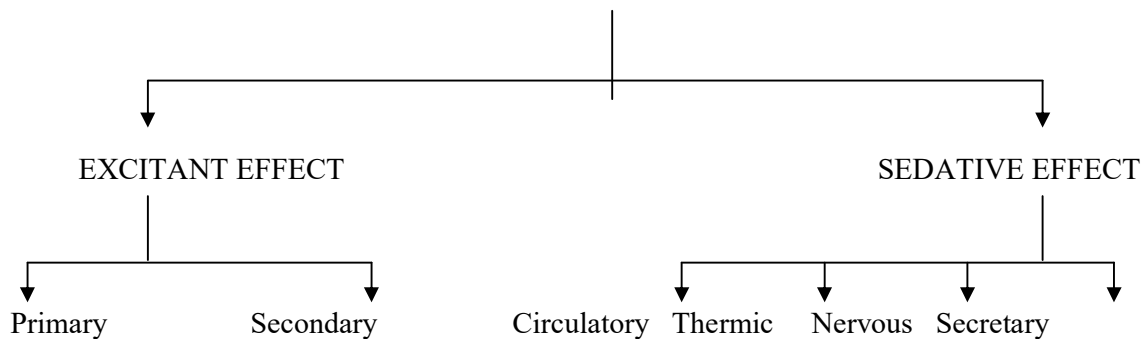
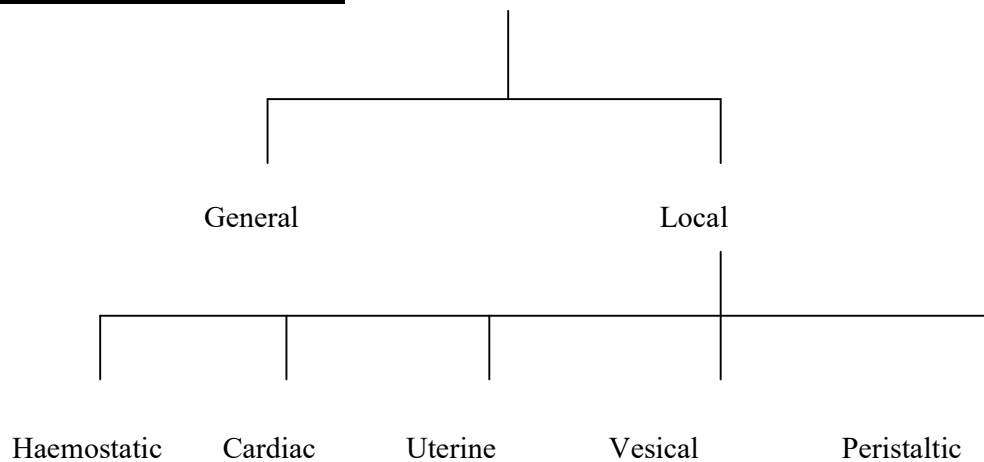
- Primary effect: Action – Excitant
- Secondary effect: Reaction – Sedative, Depressant, Atonic
- Short application at very high temperature – strongly excitant
- Less intense, slightly prolonged – moderate excitant during application and depressant after application. This is due to thermic reaction and decrease tissue action through atonic reaction.
- Prolonged application at high temperature – Both excitant and depressant. Excitant is due to increase body temperature and depressant is due to exhaustion of nervous energy.

EFFECTS OF COLD APPLICATION:

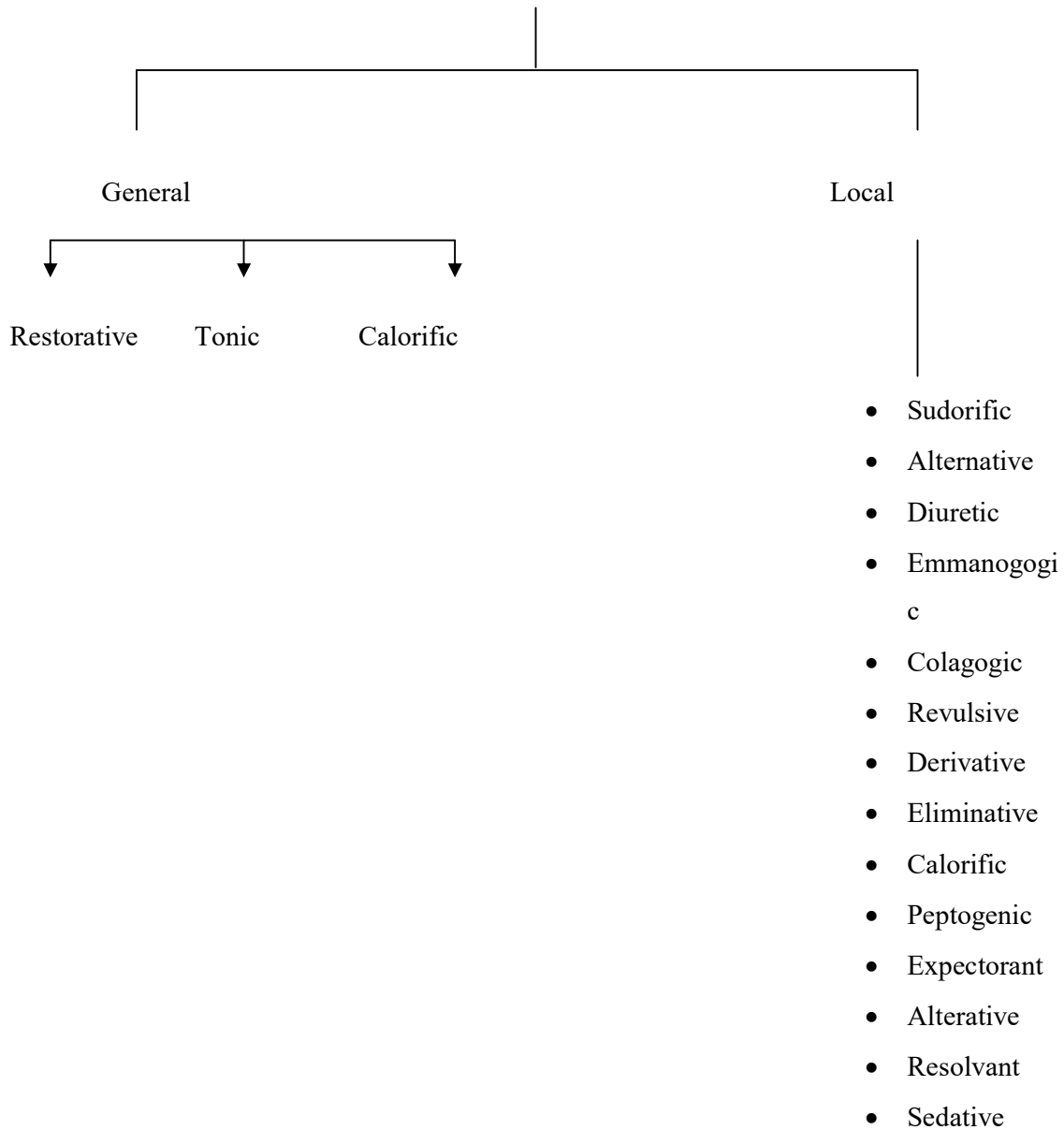
- Primary effect: Action – Intrinsically sedative but practically excitant
- Secondary effect: Reaction – Invigorative, Tonic, Restorative
- Short application of intense cold produces excitant effect and is repeated produces tonic effect
- Prolonged application at moderate cold – less excitant and less tonic
- Prolonged application primary excitant and secondary – sedative, depressant because of lower body temperature and nerve exhaustion.

EFFECTS OF NEUTRAL APPLICATION:

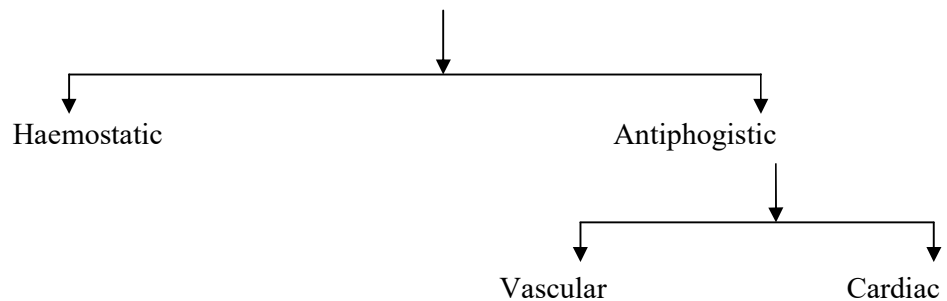
- Neutral bath (92-95°F), no thermic, no circulatory reaction, but suppresses reflex cutaneous activity by lessening the sensibility of cutaneous nerve, consequently giving calmative effect.
- Neutral bath is also restorative by checking loss of energy and encouraging cutaneous and renal activity.
- Effects of the bath can be intensified by mechanical effects like percussion, friction, exercises, artificial heat, etc.

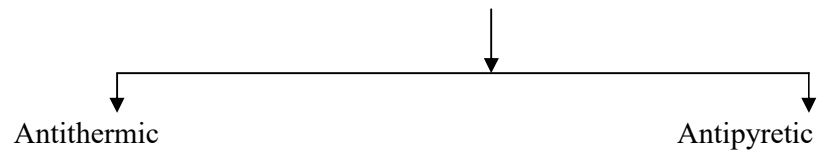
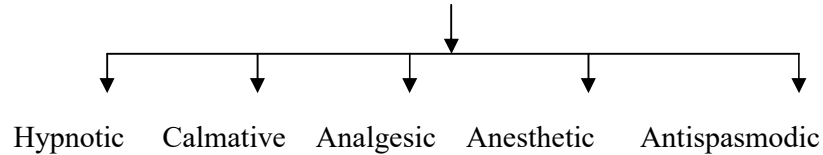
CLASSIFICATION OF HYDRIATIC EFFECTS**PRIMARY EXCITANT EFFECT**

SECONDARY EXCITANT EFFECT



CIRCULATORY SEDATIVE EFFECT



THERMIC SEDATIVE EFFECT**NERVOUS SEDATIVE EFFECT****PRIMARY EXCITANT EFFECTS****Definition:**

Primary excitant effects are those which are immediate result of motor impulses sent out by the nerve centers under the stimulus of impression produced upon the skin or mucus membrane by application mode.

Rules:

- Produced by application at higher/ lower temperature than the body
- Shorter the application, the more will be excitant effects with the temperature either very low or very hot.
- Very cold application is more excitant than cold/ very hot
- Very hot application is more excitant than hot/ warm
- The greater the difference of temperature between skin and application, more will be the excitant effects

GENERAL PRIMARY EXCITANT EFFECTS

General application induce general excitant effects

E.g. very hot shower, jet, spray, very hot affusion, hot blanket pack, hot water drinking, hot enema, hot sitz bath, etc.

- General alternate hot and cold sponging
- Full bath (105 – 110°F for 5 to 10 min)
- Alternate application are exciting

Aims:

To arouse nervous centers without exhausting them by reaction

To suppress atonic, thermic reaction by making short hot application followed by short cold application

Prolonged cold application decreases vigor of the patient or provoke undesirable thermic reaction which exhausts and weakens body resources.

Short hot application of heat, immediately followed by application of cold of equal length, the heat impression produces desired nervous impression and cold application restores the normal temperature of skin and prepares it for new excitant effects of hot application.

Indications:

- Hypoactive organs
- Obesity
- Indigestion
- Collapse
- Syncope

Contraindications:

- Weak heart
- Advanced age
- Arteriosclerosis

- Infancy
- Heat stroke

LOCAL PRIMARY EXCITANT EFFECTS

A. Haemostatic effects:

Can be obtained by direct application to bleeding vessels

Reflex action – indirectly

Direct – very hot (140-160⁰F) or very cold (32-40⁰F) application must be employed in the form of hot compress, hot douche, ice or ice compress

- **Nose bleeding** – cold application to upper spine i.e. cervical region and upper dorsal region.
- Hand immersed in ice cold water
- Holding ice cubes in palm, foot immersed in ice water
- **Pulmonary Hemorrhage** – cold compress over chest
- very hot fomentation at intrascapular region (reflex area for shoulder)
- ice application over nostril to constrict pulmonary vessels
- **Hemorrhage of stomach** – Swallowing of ice cubes, ice compress over epigastric region
- **Apoplexy** – ice compress to head, face, neck
- **Uterine hemorrhage** – short very hot fomentation or hot douche to inner thighs and spine, hot vaginal douche along with ice bag on lower abdomen. Prolonged cold application to reflex areas

B. Cardiac effect / Heart effect:

Heart effects are produced by treatments which excites the heart.

Very short application of cold to any part of face, chest – stimulates the heart.

Cold application on chest – helps in cardiac insufficiency

Hot or short cold enema, very cold compress over upper spine helps in stimulating heart functions.

Ice compress over heart for 30 minutes, 3 times a day helps in stimulating cardiac function and restore cardiac health.

Very short hot bath, hot blanket pack, hot and cold immersion bath, moderate dry friction are all helpful treatment for cardiac health.

Application of cold increases the working power and decreases the working load of heart.

Very hot application should be avoided over heart in case of cardiomegaly and major obstruction.

C. Uterine / Emmenogogic effects:

Activity which excites uterine activity or increases the activity of uterus is called as emmenogogic effects.

Cold application over lower abdomen region.

Short sudden cold application to mammary glands.

Alternate hot and cold application over breast and lower abdomen region.

Amenorrhea – short cold douche to lower abdomen.

D. Vesical effects:

Cold douche to feet and bladder stimulates vesical activity.

E. Intestinal effects:

Hot / cold / graduated enema

Cold and alternating douche over loins and abdomen, especially around the umbilicus stimulates intestinal activity through stimulation of sympathetic centers and splanchnic nerves.

Hot and cold rectal douche arouses nervous activity in semiparalysed condition of rectum i.e. chronic constipation.

SECONDARY EXCITANT EFFECTS:

Secondary excitant effects are derived only from cold application, due to tonic reaction.

GENERAL SEONDRARY EXCITANT EFFECTS:

A short cold application has excitant effect; these effects are intensified when mechanical effects are added, as it arouses every nerve fiber and every cell, thus awakening every form of activity in entire body.

A. Restorative effect:

Refreshing / invigorative.

A single short application of cold water (general application)

e.g. douche/ affusion/ immersion/ rubbing wet sheet etc,

Application of cold water to face and head when exhausted gives restorative effect, Due to reflex stimulation of nerve centers of brain and spinal cord.

Precaution:

Cold application should not be made to the surface if body is cold/ blue/ profuse sweating/ fatigue/ chills.

If surface is hot and dry – give short cold bath followed by friction, exercise to ensure reaction.

In case of extreme exhaustion – cold application to head, face, neck, spine can be made.

B. Tonic effects:

Tonic effects are produced by the measures of which vital activity increases.

An agent which gives tone to the tissues to restore functions of nutrition and assimilation and to increase vital resistance, or when systematically employed, aids in restoration of normal tissue activity both constructive and destructive thereby promote renewal of body and recuperation of its forces and an increase of vital resistance.

C. Calorific effects:

Short cold douche with strong pressure, cold the water and higher the pressure gives rise to higher calorific effects.

Heating compress covered with impervious material – here heat production is more and heat elimination is less.

Cold friction – stimulated heat production

Cold water immersion, immersion in cold water of the affected part with friction helps in producing heat in the body.

Prolonged hot application – helps in local heat production

When we prepare patient for cold treatment, helps in internal heat production.

LOCAL SEONDARY EXCITANT EFFECTS:

1. Sudorific effect:

Stimulation of preparatory function by increasing the body temperature is called as sudorific effect.

2. Alternative or spaliative effects:

Employed for reducing the weight and remove toxin deposits in tissues.

3. Depurative or Eliminative effects:

Sweating bath for eliminative procedure, does not remove large amount of urea and other toxins.

4. Expectorant effects:

The mucus membrane is closely related to skin. Thus the application which produces general perspiration of skin can also encourage mucus membrane.

5. Diuretic effects:

The effects which increases urine output is said to have diuretic effects.

6. Cholagogic effects:

These are the effects which increases the functions of gall bladder and liver.

7. Peptogenic effects:

Effects which increases the gastric secretion is said to have peptogenic effects.

8. Emmenagogic effects:

These are the effects which increases the uterine activity.

9. Revulsive Effects:

Effects produced in internal organs by application on a cutaneous area in reflex reaction.

10. Derivative effects:

It is less intense than revulsive effect. It gives relief to the congested organ by diverting blood into a distal part.

11. Resolvent effects:

These effects are for stimulation of absorption of exudates in the joints, muscles and tendons.

12. Alterative effects:

It means to bring about changes or disturbance in body's abnormal functioning.

13. Calorific Effects:

This effect is used to increase the temperature of body.

SEDATIVE EFFECTS

A sedative is an agent which moderates the abnormally increased action of some set of organs.

There are 3 general classes of sedative effects:

1. Sedative circulatory system
 - i. Antiphlogistic
 - a. Vascular
 - b. Cardiac
 - ii. Haemostatic
2. Sedative nervous system
 - a. Hypnotic
 - b. Antispasmodic
 - c. Analgesic
 - d. Anesthetic

Antiphlogestic Effects:

The application which is given to suppress or combat a local acute congestion or inflammation such as boils, an acutely inflamed joint, pneumonia, pleurisy, phlebitis.

In application of antiphlogestic measure one should keep in mind that various conditions are involved in local congestion hyperemia.

Antithermic sedative effects:

The procedure that abstracts heat from the body is called as antithermic effect.

Antipyretic sedative effects:

The procedure that not only abstracts heat but also decreases heat production is called as antipyretic effect.

COLD BATH IN INFANT AND CHILDHOOD:

Children under the age of 7 do not bear very cold water, so bath (cold) must be avoided; this is because thermogenic centers are not developed completely.

Cold friction rubbing shallow bath can be used at the temperature of 70 – 80⁰F for the child above the age of 2.

As the child advances in age, the temperature of water can be lowered and application like affusions and light douches may be used at 70 – 75⁰F.

After the age of 14 – 15, temperature can be further lowered. Daily cold douche can be given. This is very good in case of urinary incontinence in children.

Cold bath helps in general development in growing children, increases muscular tone, increases vigor and energy and also increases nerve tone.

It prevents the development of neurotic condition in young person just entering upon manhood or womanhood.

It relieves growing pain and promoted normal development.

COLD BATH FOR ADULTS:

Adults must adopt the form of bath to their conditions of life

Sedentary person need cold bath daily. If the person is not acostom to cold bath they can take a short hot bath before cold bath.

Adults who are suffering from rheumatoid arthritis, gout, brights disease, should not use extremes of temperature. Cold bath daily will help them in treating their condition. The temperature of water used should be 68 – 80⁰F.

If patients are very sensitive, a hot bath for 3 -4 minutes can be preceded before cold bath. If patient is feeble cold friction should be employed.

It is helpful to use hot baths until sweating is produces in these cases.

COLD BATH FOR WOMEN:

Daily cold is especially useful for women of civilized nation because of influences of their artificial life.

Cold bath gives nerve tone and combats nervous weaknesses.

Cold bath helps in maintaining the muscular tone.

It helps in the development of uterine functions.

In case of dysmenorrhea hot fomentation or repulsive sitz bath or hot vaginal douche can be given. Cold bath should be avoided during this time as tepid or neutral bath is best during menstruation.

During pregnancy cold douches should be avoided in all forms. Short cold friction at temperature of 60 – 70°F can be employed. Tepid and neutral bath are best. Avoid very cold application over lower abdomen and lumbar region.

During lactation cold bath may be employed with good effects but cold to the lumbar and abdomen region should be avoided.

Shallow bath can be used instead of percussion.

Cold bath is good during menopause.

COLD BATH IN OLD AGE:

In old age the skin is inactive, rigid and comparatively the blood flow is less and the heat generating power of body is greatly diminished. So the thermos and circulatory reaction are lightly to be incomplete to give rise to numerous untoward reactions.

On this account extreme of temperature should be avoided.

1. Neutral baths, wet sheet rub, cold friction, cold towel rub or douches with light pressure at temperature of 75 – 85°F can be used.
2. Cold relieves the exhaustion in patient occurred due to heat.
3. Hot sponging can be taken in the morning during winters. In winter the habitual cold bath train the skin to react promptly. This can be done by training the patient initially giving short hot bath followed by cool or tepid bath.
4. If the patient is suffering from cold or pulmonary congestion, one should modify the form of bath. Cold bath should be avoided.





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