

Heat and Cold Application



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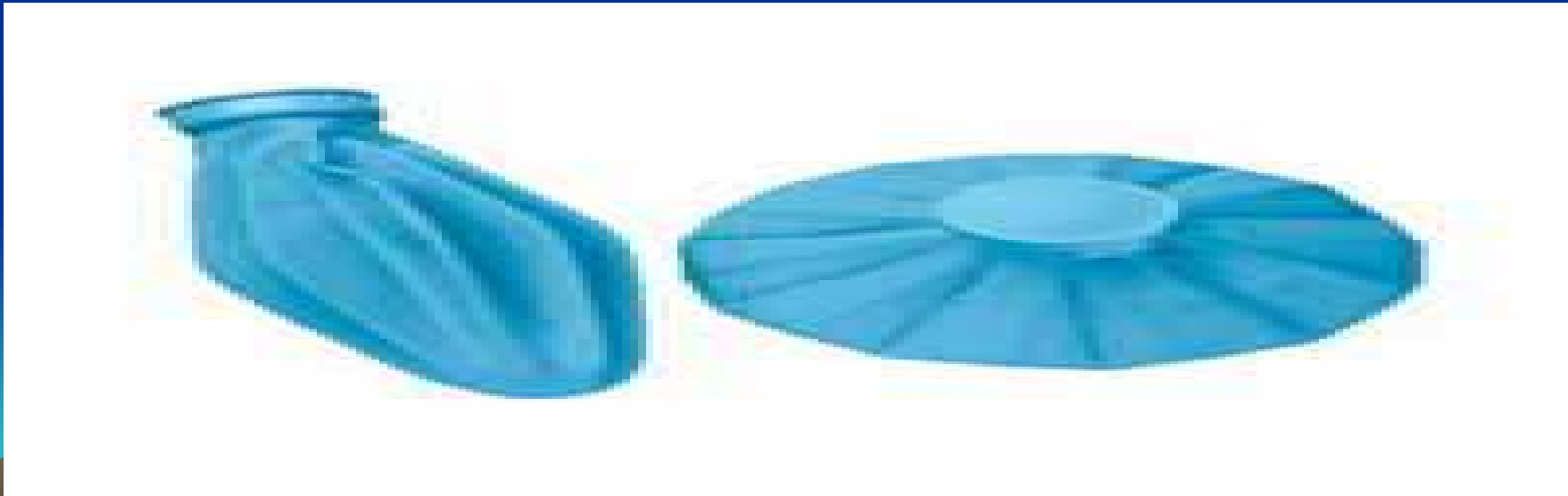


Learning Objective

- Define heat and cold application
- List the indication of using heat and cold application .
- Enumerate the contraindication for heat and cold application.
- Explain the local effects of heat
- Discuss the disadvantage of heat application
- Explain the different forms of heat application
- Local effect of cold
- Systematic effect of heat and cold application
- Contraindications to the use of heat or cold
- Temperature for hot and cold applications
- Different methods of applying heat and cold

Heat and Cold Application

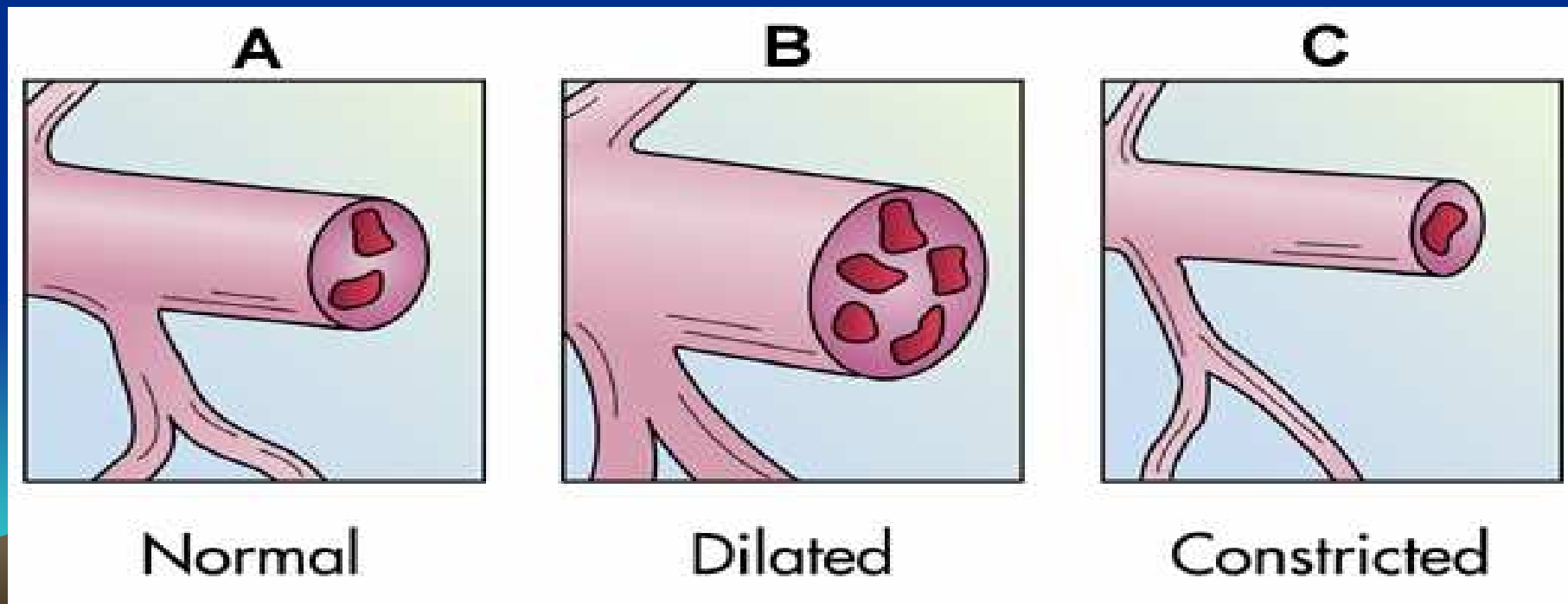
Heat and cold are applied to the body for local and systemic effects.



Purposes of heat applications

- Promote healing & comfort
- Reduce tissue swelling

Results of heat applications



Local Effects of Heat

- ✓ Vasodilatation and increases blood flow to the affected area
- ✓ Bringing (oxygen, nutrients, antibodies, and leukocytes)
- ✓ Promote soft tissue healing
- ✓ Used for client with (joint stiffness, low back pain)
- ✓ Sedative effect
- ✓ Increase inflammation



- ✓ Relieves pain, relaxes muscles, promotes healing, reduces tissue swelling, decreases joint stiffness
- ✓ When applied, blood vessels dilate, causing increased blood flow, increasing O₂ & nutrition to area and removing excess fluid from tissues
- ✓ Complications
- ✓ Burns (pain, excess redness, blisters, pale skin)



Systematic effects of heat

Heat applied on large body area



Excessive peripheral vasodilatation



Drop in blood pressure



Fainting attack



• Persons at risk

- ✓ Fair skin
- ✓ People with problems sensing pain
- ✓ Persons with metal implants
- ✓ Very young
- ✓ Elderly
 - Changes in skin with aging
 - Those with dementia might miss pain



Applying heat and cold

2 forms of application

Moist

Dry

Heat

Cold



MOIST HEAT APPLICATIONS

- ✓ Water in contact with skin
- ✓ Water conducts heat
 - ✓ Has greater, faster effect
 - ✓ Penetrates better
- ✓ Hot compresses
- ✓ Hot soaks
- ✓ Sitz baths



Disadvantage of Heat Application

Increase capillary permeability



Extra cellular fluid and substance as plasma to pass through the capillary walls



edema



Local effect of cold

- ✓ Lowers the temperature of the skin and underlying tissue
- ✓ Vasoconstriction
- ✓ Decrease capillary permeability
- ✓ Slow bacterial growth
- ✓ Decrease inflammation
- ✓ Local anesthetic effect



Systematic Effects of Cold

Excessive cold applications



Vasoconstrictions



Increase of blood pressure

Prolonged cold → **Shivering**



Cold Applications

✓ Complications

- Pain, burns, blisters
- Cyanosis

✓ Persons at risk

- Fair skinned
- Those with mental or sensory impairments
- High risk for elderly or very young



Contraindications to the use of heat

- ✓ The first 24 hours after traumatic injury (heat increase bleeding and swelling).
- ✓ Active hemorrhage (heat causes vasodilatation and increase bleeding).
- ✓ Non inflammatory edema (heat increases capillary permeability and edema).
- ✓ Skin disorder (heat can burn or cause further damage to the skin).
- ✓ Localized malignant tumor (heat increase cell growth and accelerate metastases).



Contraindications to the use of cold

- ✓ Open wound (cold can increase tissue damage by decreasing blood flow to an open wound).
- ✓ Impaired circulation (cold can further impair nourishment of the tissue).
- ✓ Allergy and hypersensitive to cold application.
- ✓ Some people react by decrease Bp.
- ✓ Inflammatory response (swelling, joint pain).



Contraindications to Use Heat and Cold

- 1- the first 24 hour after traumatic injury .
- 2- Active hemorrhage .
- 3- Noninflammatory edema.
- 4- Localized malignant tumor .
- 5- Skin disorder .
- 6- Open wound.
- 7- Allergy or hypertensive to cold .



Contraindications to Use Heat and Cold Cont'

Neurosensory
Impairment.

Immediately after
injury or surgery .

Open Wound

Impaired
Circulation

Impaired
Mental Status

Temperature for hot and cold applications

Description	Temperature	Application
Very cold	Below 15C	Ice bag
Cold	15-18 C	Cold packs
Cool	18 – 27 C	Cold compresses
Tepid	27 – 37 C	Alcohol sponge bath
Warm	37 – 40 C	Warm bath
Hot	40 – 46 C	Hot soak, hot compresses
Very Hot	Above 46 C	Hot water bag for adult



Methods of Applying heat and cold

- **Hot water bag (bottle)**
 - More Common source of dry heat
 - In expensive
 - Improper use leads to burning
- **Hot and cold packs**
 - Commercially prepared hot and cold packs provide heat or cold for a designated time



- **Electrical Pads**
 - Provide constant heat
 - Are light weight
 - Some have water proof covers to placed over a moist dressing
- **Ice Bags,**
 - Filled either with ice chips .
- **Compresses**
 - Can be either warm or cold
 - Are moist gauze dressing applied to a wound



- **Soak**
 - Refers to immersing a body part in a solution
 - Sterile technique is generally indicated for open wound
- **Sitz Bath or hip bath**
 - Used to soak a client's pelvic area
 - The client's sit on the chair and immersed in the solution
- **Cooling Sponge Bath**
 - Promoting heat loss through
 - conduction
 - Accompanied by antipyretic medication



MOIST HEAT APPLICATIONS

- Sitz bath





NURSING CHECKLIST

Heat and Cold Applications

General guidelines to follow when using heat and cold applications include:

1. Obtain a physician's order that details the site to be treated, the type of therapy, and the frequency and duration of application.
2. Select temperature on the basis of client status and agency policy.
3. Thoroughly explain procedure and expected benefits to client.
4. Assess client's status before, during, and after treatment is performed to prevent injury.
5. Document effects of therapy.

Thank You

