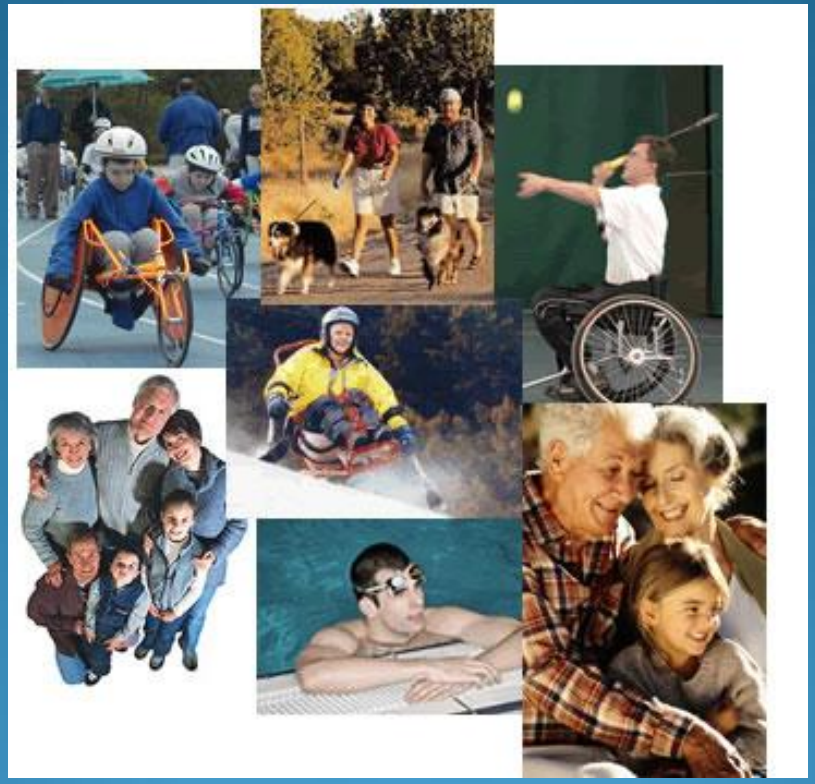
HYDROTHERAPY



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OBJECTIVES

- Define Cryotherapy.
- List different methods of cool transfer to body tissues.
- Explain the physiological effects of Cryotherapy.
- List indications, contraindications, and precautions of Cryotherapy.
- Identify different techniques of Cryotherapy application.

HEAT VERSUS COLD

THE CHOICE WHETHER TO USE HEAT OR COLD DEPENDS ON

- Stage of injury or disease.
- Area of body treated.
- Patient preference, determined by cold or heat hypersensitivity.
- The desired physiological response.
- The type and amount of tissue damaged.
- Patient's physical and psychological state.

CRYOTHERAPY

- Acute stage of injury inflammation
- vasoconstriction leads to;

  ↓metabolic rate ↓ inflammation ↓ pain
- Heat at this stage →aggravate inflammation
- The first 24 to 72 hours after injury, or until acute bleeding and capillary leakage have stopped.
- ↓ ms spasm, ↓ pain around joints before ROM ex.

THERMOTHERAPY

- 2nd phase of rehabilitation (subacute and chronic).
- ↑circulation and cellular metabolism.
- Analgesic & sedative effect.
- ↓ Pain and muscle-guarding spasms.
- promote healing.
- In acute inflammatory stage;

  ↑ hemorrhage & ↑ edema.

ADVANTAGES AND DISADVANTAGES OF USING HEAT OR COLD

HEAT	
Advantages: 1. Decrease Pain 2. Increase Tissue extensibility 3. Decrease Stiffnes***s***	***Disadvantages:*** 1. May aggravate swelling
Cold	
Advantages: 1. May prevent further swelling 2. Decrease pain	***Disadvantages:*** 1. Increase stiffness 2. Decrease tissue extensibility

Indications and contraindications of both Heat and Cold Therapy

Thermotherapy	
Indications	**Contraindications**
- Painful conditions. - Muscle spasm. - Acceleration of healing. - Sub-acute and chronic inflammation. - Prior to stretching and mobilization exercises.	- Acute inflammation. - Acute infection. - Open wounds. - Impaired sensation. - Impaired circulation.
Cryotherapy	
Indications	**Contraindications**
- Painful conditions. - Muscle spasm. - Reduction of edema and joint effusion. - Control of acute inflammation - Modification of spasticity - Facilitation of motor control	- Cold hypersensitivity - Peripheral vascular disease - Over a regenerating peripheral nerve - Over an open wound

FLUIDOTHERAPY

FLUIDOTHERAPY

Dry-heat modality that transfers heat energy by forced convection.

- ✓Consists of cellulose particles circulated by hot air.
- ✓Cellulose particles become suspended when the stream of air is forced through them.
- ✓The fluidized particles demonstrate properties similar to those of liquids.
- ✓patients tolerate a much higher temperature than with either paraffin wax or moist heat.

- ✓Superficial heat therapy.
- ✓The viscosity of the air-fluidized system is low
- ✓Allowing a patient to submerge body parts into the fluidized bed and suspend these parts similarly to a fluid bath
- ✓permitting exercise with relative ease.
- ✓providing a strong massaging action, sensory stimulation, and levitation.

FLUIDOTHERAPY UNITS

- ✓Comes in a variety of sizes and are best used for treating the distal extremities.
- ✓The patient places the body part through the entrance sleeve of the Fluidotherapy unit.
- ✓The sleeve is then secured to keep the cellulose particles from escaping.
- ✓The treated body part feels as it is immersed in a moving liquid bath, such as a whirlpool.

PHYSIOLOGICAL EFFECTS OF FLUIDOTHERAPY

- ✓General heating effects.
- ✓Micromassage, levitation, and sensory stimulation.
- ✓Exercise during treatment can help increase ROM.
- ✓Temperature ranges are 38.8°C to 47.8°C.
- ✓lower ranges for patients who have greater tendency for edema formation.
- ✓In beginning programs for desensitization.

- ✓ Pt may not be able to tolerate higher temperatures.
- ✓Agitation can be controlled for patient comfort.
- ✓Patients can perform exercises while the affected body part(s) is within the cabinet.
- ✓Fluidotherapy may be of benefit clinically in;
  - Increase soft tissue extensibility
  - Reduce joint stiffness

ADVANTAGES OF FLUIDOTHERAPY

- ✓Convenient and easy to apply.
- ✓Temperature can be controlled.
- ✓Agitation can be controlled for comfort.
- ✓Variety of unit sizes allows for most body areas to be treated.
- ✓Allows for exercise during intervention.
- ✓Provides a dry, comfortable heat.

DISADVANTAGES OF FLUIDOTHERAPY

- ✓Relatively expensive modality.
- ✓Intolerance to the enclosed container.
- ✓Intolerance to the dry materials used.

INDICATIONS

- ✓Pain reduction
- ✓Chronic inflammatory conditions.
- ✓Post-fracture management

- ✓Reynaud's syndrome.
- ✓Desensitization.

CONTRAINDICATIONS

- ✓Symptomatic pain relief unless etiology is established.
- ✓Cancerous lesions.
- ✓Open wounds.
- ✓Serious infectious disease.

MUDS AND PELOIDS

Mud has been used for therapeutic purposes for thousands of years.

TYPES OF MUD OR PELOIDS

MINERAL MUD OR FANGO:

- ✓Volcanic ashes found near lakes.
- ✓Sulfur, iron, silicates and radioactive material.

MINERAL SEA MUD:

- ✓Consists of remains of sea life.
- ✓Found along the shores of waterways.

ORGANIC MOOR OR PEAT MUD:

✓Decaying or decomposed vegetable matter as from roots, leaves.

✓Found in a crude form and must be processed before being used for packs and baths.

THERAPEUTIC EFFECTS OF MUD

THERMAL EFFECT:

✓Warm mud applications increase local metabolism.

MECHANICAL EFFECT:

✓Pressure of mud on body surface and osmotic changes in the skin →softening and resolution of pathological products.

CHEMICAL EFFECT:

✓Mineral effect from the minerals in the mud.

✓Increased ions transfer and ions migration to the other pole.

✓Depending on the ion;

✓Zinc for fungi, Copper for allergy, Iodine for adhesions, and Magnesium for edema.

PHYSIOLOGICAL EFFECT:

- ✓↓ blood pressure, ↓ pulse rate, and ↑internal body temperature.
- ✓Relief of pain and muscle spasm.

PSYCHOLOGICAL EFFECTS:

- ✓Direct contact and pressure ↓ anxiety and stress.
- ✓ Moist heat has a soothing and calming effect.

INDICATIONS OF MUD

- ✓Chronic Inflammatory joint disease.
- ✓Low back pain.
- ✓Post- traumatic stiffness.

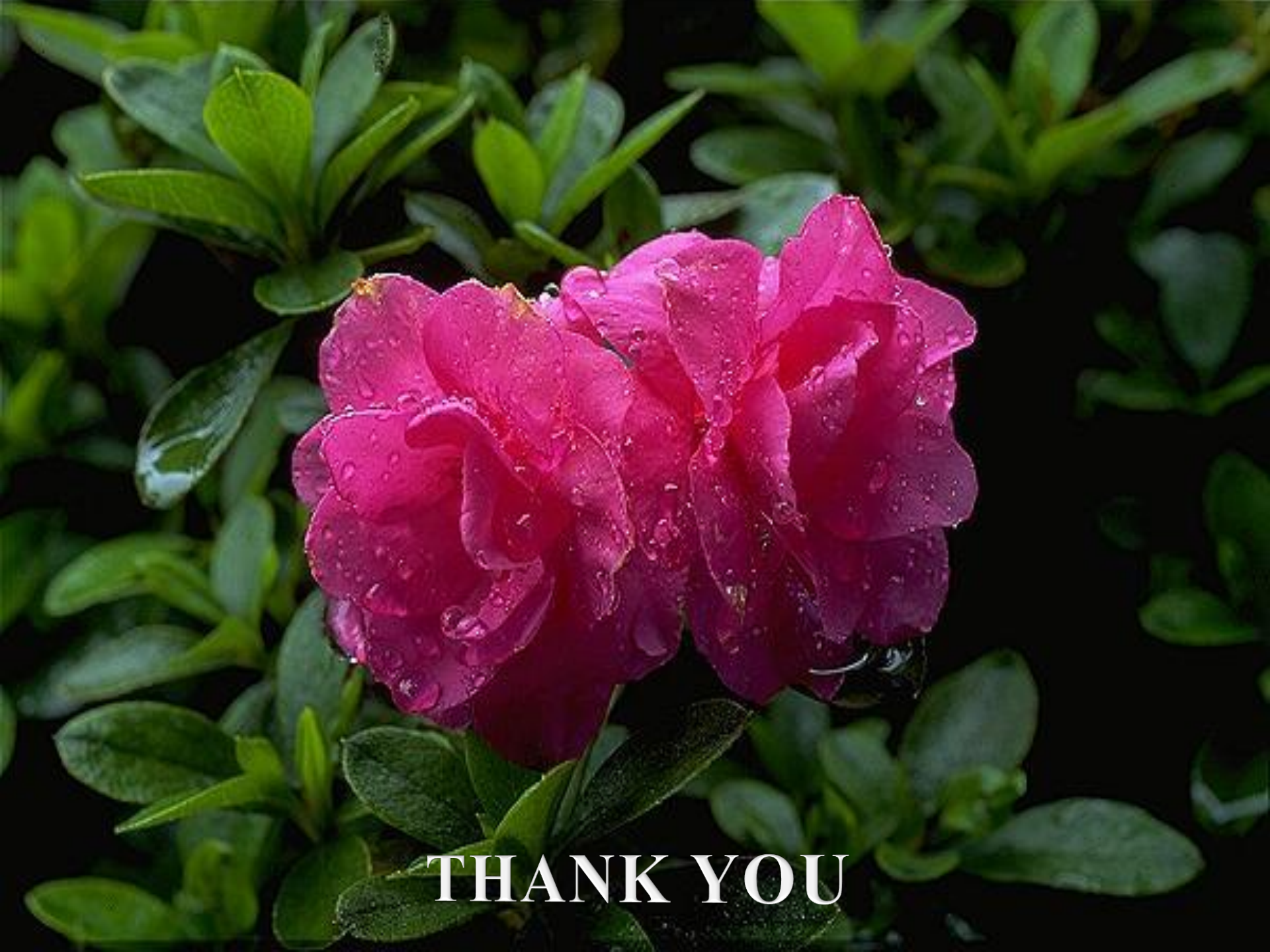
- ✓Diabetic peripheral Neuropathy.
- ✓Gout.
- ✓Fibrositis.

CONTRAINDICATIONS OF MUD

- ✓Acute inflammation.
- ✓Heart Disease.
- ✓Respiratory disease.
- ✓Wound infection.
- ✓Tuberculosis.
- ✓Cancer.
- ✓Sensitive skin.
- ✓Sensitive patients to pressure (claustrophobia).

DISADVANTAGES OF MUD THERAPY

- ✓Difficulty in storing and in heating the mud.
- ✓Difficulty in supplying the mud if the department is located in areas that are not producing the mud.
- ✓Cross infection risks and not easy disposal of the mud.


THANK YOU