Chapter 15

Part 2: Application of Superficial Heat Modalities

Objectives
- Describe the common types of superficial heating modalities
- Describe the physiological effects of superficial heat
- Discuss the indications, contraindications, and precautions associated with heat modalities

Superficial Heat Modalities
- Hot pack
- Paraffin bath
- Warm whirlpool

Depth of penetration: 2 cm.

Local Physiological Effects of Heat Applications
- ↑ metabolism
- ↑ blood flow
- ↑ inflammation
- ↓ muscle spasm
- ↓ pain
- ↓ joint stiffness
- ↑ muscle tissue extensibility

General Indications for Heat Applications
- Subacute inflammation
- Chronic pain
- Subacute or chronic muscle spasm
- To increase blood flow
- To increase tissue extensibility

General Contraindications for Heat Applications
- Acute injury/inflammation
- Uncovered open wounds
- Compromised circulation
- Anesthetic skin
- Application directly to eyes or genitals
- Application directly over the abdomen during pregnancy
Moist Heat Pack - Specific Indications
- Subacute or chronic conditions
- Target tissue less than 2 cm.
- General relaxation

Moist Heat Pack – Precautions
- Always check on the athlete within the first 2-3 minutes and then every 5 minutes thereafter to make sure the heat modality is not too hot
- Don’t have an athlete sit or lie on a hydrocollator pack

Moist Heat Pack – Application Procedures
- Remove pack from water, allow to drain for a few seconds
- Never prepare the pack on the athlete
- Place pack in multiple layers of toweling or a hydrocollator pack
- Remove layers of towelling as pack cools
- Leave on for 20-30 minutes

Whirlpool – Specific Indications
- Subacute or chronic conditions that would benefit from both the application of heat + range-of-motion
- Wounds (the flow of water provides a debridement action)
  - Whirlpool must be cleaned thoroughly after such a treatment!

Whirlpool – Precautions
- All whirlpools should be plugged into a ground fault interrupter (GFI) plug
- Never have the athlete turn the whirlpool motor on or off
- Whirlpools should be cleaned daily and after each use when open wound is treated
- Athletes should never undergo full body immersion treatment prior to practice (increases core body temp, may cause light-headedness)
- Never allow the turbine to run dry

Whirlpool – Application Procedures
- Temperatures
  - Cold: 55º-65º F
  - Warm: 98º-110º F
    - The larger the surface area being treated, the lower the temperature
      - 98-110º F - arm, hand, foot, ankle
      - 98-104º F - lower leg, knee, thigh
      - 98-102º F - low back, full body
- Treatment duration – 15-20 minutes
**Whirlpool – Application Procedures**
- Fill whirlpool to appropriate temp. and adequate depth to cover body part being treated
- Adjust turbine height
- Adjust water/air flow
- Place patient in comfortable position
- Turn on whirlpool

**Paraffin Bath – Indications**
- Subacute or chronic injuries involving angular surfaces
  - Hands/fingers
  - Wrists
  - Elbows
  - Ankles
  - Feet

**Paraffin Bath – Precautions**
- Skin should be thoroughly cleaned
- Jewelry should be removed
- Instruct patient not to touch the sides or bottom during dipping
- Instruct patient not to move their hand or foot during dipping
- Unit should be cleaned and wax replaced every 6 months

**Application Procedures – Paraffin Bath**
1. Thoroughly clean body part to be treated
2. Instruct patient to dip body part into the paraffin bath and then quickly remove it
3. Wait for the accumulated wax to dry (it will turn off white or ashen)
4. Repeat steps 2 & 3 six to twelve times
5. Wrap body part in a plastic bag and then cover with a towel
6. Leave paraffin on for 20-30 minutes or until heat is no longer felt

**Summary**
- ✓ Describe the common types of superficial heating modalities
- ✓ Describe the physiological effects of superficial heat
- ✓ Discuss the indications, contraindications, and precautions associated with superficial heat modalities

**What questions do you have?**