Therapeutic Massage
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Educational Objectives
• Following the completion of this presentation, the learner will be able to:
  - Understand what therapeutic massage is
  - Why massage is used by Athletic Trainers
  - The contraindications of therapeutic massage
  - Differentiate, and understand, the different types of massages and their effects
  - Understand the importance of lubricants in during the massage

What is massage?
• Massage is a mechanical stimulation of the tissues by means of rhythmically applied pressure and stretching
• The most important tools in massage are:
  - The clinician’s hands
  - The setting
  - The patient’s comfort
  - Knowing which type of massage to use

Why massage is used
• To increase flexibility, coordination, venous return, and blood flow
• To decrease neuromuscular excitability and pain
• To stimulate circulation
• To facilitate healing and restore joint mobility
• To remove lactic acid and edema
• To treat bursitis, tendinitis, muscle spasms, and myositis

Contraindications
• Acute contusions
• Acute sprains
• Acute strains
• Fractures
• Open Wounds or abscesses
• Areas of infection or malignancy
• Acute phlebitis
• Arteriosclerosis
• Thrombosis
• Embolism
• Severe varicose veins
• Cellulitis
• Synovitis
• Pregnancy

The different types of massage
• Hoffa Massage
• Friction Massage
• Connective Tissue Massage
• Acupressure and Myofascial Trigger Point massage
• Myofascial Release
• Rolfing
• Trager
Hoffa Massage

- Considered the “traditional massage”
- Consists of:
  - Effleurage
  - Petrissage
  - Tapotment
  - Vibration

Hoffa Massage

- Indications
  - Muscle spasm, myositis, bursitis, tendonitis, and postural strain
  - To prepare the athlete for deeper massage techniques and to be used as a sedative
  - Decrease pain intensity associated with DOMS
  - Loosen adhesions (petrissage), Increase circulation, and stimulate sensory nerves (tapotment)

Hoffa Massage

- Contraindications
  - Arteriosclerosis, thrombosis, severe varicose veins, acute phlebitis, cellulitis, synovitis, abscesses, skin injections, and certain cancers
  - Acute inflammatory stage

Hoffa Massage

- Technique/Procedure
  - Effleurage
    - The therapist provides light or deep strokes of the palms and fingers
    - Unidirectional circular motions should be made moving towards the heart
    - Generous lubrication is required

Hoffa Massage

- Petrissage
  - Repeated grasping, pressure, lifting and rolling of muscle tissue with the thumbs and fingers
  - As if “kneading” the muscles
  - Performed from the distal to proximal portion of the muscle
  - Kneading performed either parallel or perpendicular to the muscle fibers
  - Little lubrication is required
Hoffa Massage

- **Tapotment (Percussion)**
  - Rhythmic and brisk blows from alternating hands\(^1,2,5,7\)
  - Blows can be delivered by the hypothenar eminence of a closed or opened hand, slapping or tapping of the finger tips, or clapping with the concave surface of cupped hands\(^1,2,5,7\)
  - No lubrication is required\(^1,2,5,7\)

- **Vibration**
  - Hands or fingers are placed firmly over the treatment area\(^6,7\)
  - Fine rhythmical trembling is produced from the entire forearm into the hands\(^6,7\)
  - Hands should remain in constant contact with the athlete\(^6,7\)
  - No lubrication is required\(^6,7\)

**Typical Hoffa Routine**

1. Superficial to deep effleurage
2. Petrissage
3. Friction or tapotment
4. Deep to superficial effleurage

**Treatment duration can be from 3 to 20 minutes to even an hour**\(^3,11\)

Friction Massage

- **Superficial tissue manipulation over a small area**\(^5,6,7\)
- **Technique/Procedure**
  - Uses the tips of the fingers, thumb, or heel of the hand\(^5,6,7\)
  - A small circular motion of deep pressure is provided\(^5,6,7\)
  - The skin is moved over the underlying tissues\(^5,6,7\)
  - Lubrication is not recommended\(^5,6,7\)

**Indications**

- Loosen adhesions, aid in edema absorption, reduce local muscular spasm\(^5,6,7\)
- Produce a reflex effect to remove "knots"\(^5,6,7\)

**Contraindications**

- Acute inflammation\(^5,6,7\)
- *Refer to Hoffa contraindications*\(^5,6,7\)

Cross-Friction Massage

- **Superficial Tissue is manipulated perpendicular to the muscle fibers**\(^5,6,7\)
- **Ice may be applied prior to massage as an analgesic**\(^5,6,7\)
- **Little lubrication is required**\(^5,6,7\)
Cross-Friction Massage

- **Indications**
  - Reduce adhesions in connective and muscle tissue\(^1,7\)
  - Recreate inflammation in chronic pathologies to aid in healing (especially tendonitis, IT band friction syndrome)\(^1,7\)
- **Contraindications**
  - Acute inflammation, *refer to Hoffa Massage\(^1,7\)*

Connective Tissue Massage

- **Stroking technique to manipulate the superficial connective tissue\(^5,6,7\)**
- **Treatment duration is 15 to 25 minutes**
- **2 to 3 treatments per week\(^5,6,7\)**
- **After 15 treatments, a 4 week break is recommended\(^5,6,7\)**
- **This technique should not be provided without initial supervision from an instructor trained in this technique\(^5,6,7\)**

Connective Tissue Massage

- **Indications**
  - Loosen skin scars, aid in fracture healing, arthritic pain, lower back pain, thrombophlebitis, Raynaud's disease\(^5,6,7\)
  - Help revascularization after fractures, dislocations, and sprains\(^5,6,7\)
- **Contraindications**
  - Tuberculosis and tumors\(^5,6,7\)

Connective Tissue Massage

- **Technique/Procedure**
  - Patient position is typically seated, but may be prone
  - A pulling stroke is performed with the tips of the fingers pulling the skin and subcutaneous tissues away from the underlying fascia
  - Lubricant is not used
  - The treatment area begins at the coccyx and terminates by pulling to the L1 vertebrae

Acupressure

- **Acupressure is a type of message that is based on the Chinese art of acupuncture.**
- **The Chinese believed in forces that flowed through the body**
- **The lines that these forces followed are called meridians**
- **There are 14 meridians**
Acupressure
- Along the meridians are acupuncture points
- The Chinese have identified thousands of acupuncture points
- Reference to these charts and stimulation of these points can reduce pain in areas of the body associated with the particular point

Myofascial Trigger Point
- This is the western equivalent to acupuncture
- This technique focuses on reducing areas of hypersensitivity and spasm in muscles
- There is a distinctive feel to trigger points

Trigger points
- Trigger points are described as having the following qualities: restricted/adhered, dense/gritty, fibrous, taut, a knot or lump
- May be painful due to direct trauma or from overuse.

Myofascial trigger point technique
1. Locate the point, the athlete might tell you of a "tight spot." Locate the origin and insertion of that muscle.
2. Apply moderate pressure use thumb, fist or elbow. Gradually increase pressure to an "uncomfortable" rather than a painful level.
3. Shorten the muscle slowly. Move the tissue toward the point the point should feel like it is softening as the tissue is shortened.
4. Hold the position and the pressure for 30-90 seconds until the tissue feels softer once the release is felt gradually release the pressure and return to starting position.
5. Apply a slow moderate static stretch to the muscle after release.
How Trigger Points Work

• “There probably is no single explanation of how a trigger point release works.”¹
• It is theorized that the stretch reflex is stimulated to help the muscle relax.¹

When to Use Trigger Points

• Can be used in both acute and chronic conditions and in all phases of the healing process⁵,⁶,⁷
• The site of application must not be inflamed or swollen⁵,⁶,⁷

Myofascial Release

• Use the technique to ease pressure in the fibrous bands of connective tissue, or fascia, that encase muscles throughout the body¹⁰
• When muscle fibers are injured, the fibers and the fascia which surrounds it become short and tight¹⁰

Purpose of Myofascial Release

• Myofascial release is a technique that focuses on stretching, broadening and/or loosening the connective tissue¹. This is accomplished by reducing the amount of abnormal adhesions between connective tissue¹⁰
• This helps the athlete regain or maintain normal ROM¹⁰

How to Apply Myofascial Release

• Myofascial techniques are more effective when applied without a lubricant¹
• Use moderate to light pressure on the tissue and stretch it to the point of resistance. This lengthens the connective tissue¹
• Use a loose fist or a flat hand to apply tension to the broad planes of the fascia¹

How to apply
After treatment

• PNF and other stretching techniques help elongate the tissue and reinforce the treatment\textsuperscript{5,6,7}
• Do not ice muscular areas after myofascial release, this will counteract the blood flow gained during the treatment\textsuperscript{5,6,7}
• But ice may be applied to the tendons and ligaments immediately following treatment\textsuperscript{5,6,7}

Effects of Myofascial Release

• Decrease muscle tension\textsuperscript{10}
• Loosen connective tissue\textsuperscript{10}
• Enhance flexibility\textsuperscript{10}
• Mechanically elongate tissue to increase ROM\textsuperscript{10}

When to Use Myofascial Release

• Can be used for acute or chronic conditions\textsuperscript{10}
• \textbf{CAUTION:}
  - When patient is taking anticoagulants such as Coumadin and bruises very easily\textsuperscript{10}
  - When patient has an excess of inflammation\textsuperscript{10}

Rolfing

• Used to correct structural inefficiencies with manual soft-tissue massage which focuses on balance of the body
• Indications -
  - Structural or postural inefficiencies that affect other aspects of the body (i.e. poor posture that causes breathing difficulty)
• Contraindications -
  - Acute Traumatic injuries

Rolfing

• Technique/Procedure
  - Standardized and is not modified for specific pathologies
  - Focuses on the myofascia
  - Involves ten hour long sessions that focus on
    1. Respiration
    2. Lower extremity balance
    3. Sagittal plane balance
    4. Frontal plane balance
    5. Pelvic Balance
Rolfing

6. Weight transfer from head to feet
7. Head and body coordination
8. Relationship between upper and lower body
9. Same as above
10. Balance of the whole system
- Should not be performed without proper instruction from a Rolfing specialist5,6,7

Trager

• Uses soft-tissue manipulation and neurophysiological re-education
• Indications
  - To correct abnormal movement patterns via better neuromuscular control
• Contraindications
  - Abnormal movements caused by acute trauma

Trager

• Technique/Procedure
  - Mobilization using traction and rotation to relax the body part5,6,7
  - Uses gentle and passive rocking motions5,6,7
  - Once relaxation has occurred, active movements are performed that provide neuromuscular re-education to promote normal movement5,6,7

The different effects of massage

• Physiological effects of massage include:
  - Reflexive
  - Mechanical
• Psychological effects are also involved

Reflexive effects of massage

• Pain
• Circulation
• Metabolism

Effects on pain

• The stimulation of sensory receptors block the transmission of pain carried in small diameter nerve fibers (gate control theory)
• Stimulation of painful areas in the skin can stimulate the release of endogenous opioids, beta-endorphins and enkephalin
Effects on circulation

- Very light message produces an almost instantaneous dilation of lymphatics and small capillaries
- Heavy pressure causes a more lasting dilation, this increase in blood flow will also cause an increase in temperature to the massaged area.
- Massage can also affect the flow of lymph

Effects on metabolism

- Increased circulation also means an increase of waste dispersion and an increase of oxygen and fresh blood

Mechanical effects of massage

- Mechanical effects are always accompanied by some reflexive effects
- Mechanical techniques stretch a muscle, elongate fascia, or mobilize soft tissue adhesions
- Effects muscle and skin

Effects on muscle(s)

- Increases blood flow to skeletal muscle.
- Retard muscle atrophy but does not increase strength or bulk of muscle
- Increase range of motion

Effects on skin

- Increase skin temperature
- Friction massage can loosen adhesions and soften scars
- Toughens yet softens the skin

Psychological effects of massage

- Helps to relieve tension and anxiety
- The hands-on effect helps athletes feel as if someone is helping them
Lubricants

- Typical lubricants consist of:
  1. Oils
  2. Lanolin
  3. Powder
  4. Analgesic balms
  5. Special massage oils

- Indications for using lubricants include:
  1. Dry skin
  2. Recently removed cast
  3. Present scar tissue
  4. Excess hair

- Using a lubricant helps to create a more effective therapy for the patient. They also help eliminate skin friction and irritation.$^6,7,8$

- One clinician believed that the most effective lubricant is a combination of one part beeswax to three parts coconut oil.$^6,7,8$

References


References cont.