Guidelines for Using Therapeutic Modalities

Chapter II

Acute vs. Chronic

Acute Injuries
- Traditional definition: Results from trauma
- More accurate definition: When the signs of inflammation are still present.

Chronic Injuries
- Traditional definition: Results from overuse
- More accurate definition: When the signs of inflammation have left the injured area.

Initial Acute Injury Phase
- Primary goal in the first 48-72 hours is to decrease pain and swelling in the injured tissues.
- The less swelling that accumulates the better off the patient will be.
- Modality of choice: ICE!!
- WHY???
- How can you effectively utilize ice?
Other Modalities Choices for Initial Acute Phase

- Compression
  - Units that combine cold and compression are best
- Electrical Muscle Stimulation
- Ultrasound
- Low-Power Laser
  - Can stimulate trigger points to modulate pain

Inflammatory Response Phase

- Inflammatory signs are beginning to decrease.
- Will still have pain with movements.
- Primary goal: Decrease pain and swelling

Modality Choices:
- Cryotherapy
- Superficial Heat
- Electrical Muscle Stimulation
- Compression
- Low-power laser

Fibroblastic Repair Phase

- Inflammatory response has resolved and scar tissue begins to lay down.
- Swelling has resolved and injury can still be tender to touch and with movements.

Primary goals:
- Increase blood flow
- Removal of debris and bi-products
- Analgesia
- Increase ROM and strength
Modality Choices

- Cryotherapy
- Electrical Muscle Stimulation
- Superficial heating modalities
- Low Power Laser
- Compression

Maturation-Remodeling Phase

- Longest Phase
- Injury is not painful to the touch, but some pain with motion could still be felt.
- Remodeling is occurring due to stresses placed upon the different tissues. (Wolff's Law and SAID Principle.)

Wolff's Law

Bony Tissues remodel and adapt to the forces placed upon them. This is due to osteoclastic and osteoblastic activity. The osteoclasts will remove bony tissue from the sites of little or no stress and osteoblastes will place the tissue upon the sites of new stresses.
Modality choices

- All modalities are safe during this phase
- Primary goals:
  - Increase in blood flow to deeper tissues
  - Increase lymphatic flow
  - Pain modulation
  - Assist increases in ROM and strengthening

How do we choose?

- Determine treatment goals and target tissues
- Determine which modalities work best with that particular athlete in that particular situation
- Constantly re-evaluate the injured area and the progress that is being made.

Other Factors to Consider when choosing modalities

- **Indication**- A situation when you should use a certain modality to achieve treatment goals.
- **Precaution**- A situation when you have to be careful when using a modality because an adverse response could occur.
- **Contraindication**- A situation when you should not use a certain modality because it is inappropriate and could cause harm to the patient.

Current Research
Decision-Making Scheme for Modalities

- Tissue Depth
- Subacutaneous Tissue
- Tissue Pathology
- Limb Function
- Treatment Goals
- Available Modalities
- Exclude Contraindicated Modalities
- Modality Type
- Surface Area Being Treated
- Application Technique and Protocol

Questions