

Massage and the Inflammatory Process

Inflammation

What is it?

Immediate, local response to injury and tissue damage.

5 Signs of Inflammation

- Redness
- Pain
- Swelling
- Palpable heat
- Loss of Function

Causes of Tissue Damage

- Trauma
- Infection
- Surgery
- Immune response
- Extreme heat/cold
- Ischemic damage
- Chemical or radiation damage

Stages of Healing

- Acute Stage
- Subacute Stage
 - Early
 - Late
- Chronic
- Note: healing time varies. There is overlap between these stages and time frames are only guidelines.

Acute Stage

- Starts at the moment of injury, and can last 3-4 days post injury
- **Necessary step towards the health of tissue**
 - permits wound and other soft tissue injuries to heal and infection to clear up

Subacute Stage

- Begins within 2-3 days of injury, continues for up to 3 weeks
 - Early – 2 days to 2 weeks
 - Late – 2nd-3rd week of subacute stage

Chronic

- 2-3 weeks post-injury continuing for 1-2 years or longer.

Summary

- Acute: time of injury -> 4 days
- Sub: 2 days -> 3 weeks
- Chronic: 2 weeks -> 1-2 Years

NOTE

1. RMT must rely on observation and palpation skills
2. treat tissue according to signs and symptoms
3. NOT strictly to the time that has elapsed since injury

Signs and Symptoms

Acute

- 5 signs of inflammation present
 - redness, pain, swelling, palpable heat, loss of function
- bruising – if present, black, purple, red

Early Subacute

- inflammation has decreased
- tissue is more pink than red
- temperature warm vs hot
- pain has decreased
- slight swelling remains
- ROM – pain when tissue resistance is met
- Muscle spasm has decreased
- Bruising – if present, unchanged

Late Subacute

- May or may not be some residual swelling
- Minimal discomfort
 - Pain occurs when pressure is applied
- Potential loss of ROM due to adhesions and muscle weakness
- Bruising – yellow, green, brown

Chronic

- Inflammation is resolved
- Pain may occur in the affected tissue
- No edema
- Decrease in function
- Loss of full ROM

Factors that affect the healing process

- Severity of the injury
 - More severe = more time
- Age
- Infections
 - Because of the increased inflammatory response and increased local tissue necrosis resulting in impairing wound healing
 - Ex. Post surgical scars, stitches
- Presence of foreign material
 - Prolong healing process, increased chance of infection
- Nutritional support
- Pre-existing conditions
 - Diabetes
- Inadequate blood supply
- Wound separation
- Rx's
- Smoking

Treatment Goals and Advisories

Acute Stage

- Tx goals
 - Limit the inflammatory process
 - Reduce pain and swelling
 - Decrease sympathetic nervous system firing (SNS)
 - Prevent re-injury
 - Decrease, but DO NOT remove protective mm spasm
 - Treat compensating structures
- Positioning of client
 - Comfort
 - Do not stress injured area
- Hydrotherapy
 - Cold to decrease pain and swelling
- 1st aid for an acute injury
 - R – Rest
 - I – ice
 - C – compress
 - E – Elevate

Early Subacute

- Tx goals
 - Same as acute stage
 - Maintain any available ROM
 - Treat tissue peripheral/proximal but NOT distal to lesion site
- Positioning
 - Same as acute stage
- Hydrotherapy
 - Cool application
 - Introduction of mild contrast application

Late Subacute

- Tx goals
 - Decrease any remaining edema
 - Decrease TP's
 - Decrease pain
 - Decrease adhesions
 - Increase ROM
 - Increase mm strength
 - Treat compensating structures
- Hydrotherapy
 - Contrast hot/cold
 - ** if any inflammation returns, use mild contrasts

Chronic

- Tx Goals

- Decrease/eliminate TP's
- Decrease restrictive adhesions
- Restore ROM
- Restore mm strength
- Treat compensating structures

- Hydrotherapy

- Contrast hot/cold
- Hot applications

Treatment Considerations

Acute

- Use GSMT to increase PSF on unaffected areas to;
 - Decrease pain and increase C comfort
 - Accustom the C to touch
 - Treat any compensating areas
- Passive movements on unaffected joints
 - To maintain ROM
- Address swelling
 - Pillow affected area for elevation
 - Cool hydrotherapy applications
 - Pump relevant lymph nodes
- *** NO lymphatic or circulatory work is to be done DISTAL to the site, or on injury site because injured tissue cannot handle increased movement of fluids, painful congestion will result

Early Subacute

- address swelling
- pillow area
- cool hydrotherapy application
- pump relevant lymph nodes
- massage to proximal tissue
 - TP's in muscles that refer to injury site should be addressed
 - Techniques to decrease spasm
 - Techniques directed towards injury site to avoid drag on healing tissue **
 - Distal to injury, only gentle stroking and muscle squeezing are performed to avoid congestion
- Passive movements are performed on unaffected joints
 - To maintain ROM
- AFFECTED joint(s) are slowly moved by client (AF)
 - Movement is to be pain free in a comfortable range
 - Aids in maintaining joint health and ROM

Late Subacute

- Address swelling
 - Same as early subacute
- Massage on whole limb
- TP's in local and proximal tissue can be treated
- Massage to the injury site
 - Peripheral – Central – Peripheral
 - Break down adhesions
- Stay within C's pain tolerance
- Apply stretch to scar tissue
 - So collagen fibres may realign
- EFF
 - Remove debris from the inflammation process, and break down adhesions
- Passive Movements are performed on affected joints
 - Joint play can be used as well to prevent adhesions and aid in mobilizing joints

Chronic

- Affected area can be worked
- Techniques can be applied with more pressure, still keeping within the C's pain tolerance
- Prolonged stretch can be applied to scar tissue
- After any vigorous techniques causing hyperemia, cold/cool hydro applied
- TP's are addressed
- Hypertonicity (HT) and fascial restrictions are addressed
- Joint play can be used to increase joint health and ROM