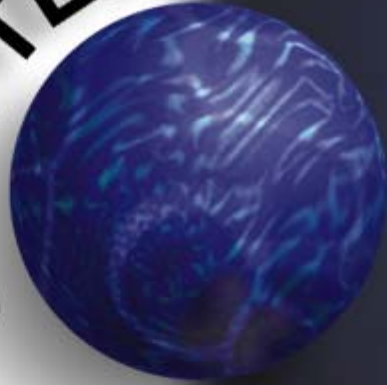


CHAPTER



# Manual Therapy Techniques

[www.fisiokinesiterapia.biz](http://www.fisiokinesiterapia.biz)

**manual therapy:** the use of hands-on techniques to evaluate, treat, and improve the status of neuromusculoskeletal conditions

**massage:** the systematic and scientific manipulation of soft tissue for remedial or restorative purposes

# ***Effects of Massage***

- **Muscle relaxation**
- **Blood vessel dilation**
- **Increased blood and lymph flow**
- **Promotion of fluid mobilization**
- **Stretching and breakdown of adhesions**

# ***Types of Massage***

- **Effleurage**
- **Petrissage**
- **Friction**
  
- **Indications, contraindications, precautions**

# ***Application of Massage***

- **Elevate part if edematous.**
- **Make strikes toward heart.**
- **Maintain contact with skin throughout.**
- **Use slow, even, relaxing rhythm.**
- **Warn patient of sensation expected.**
- **Friction massage uses small area, constant pressure, crossing pattern.**

**myofascial release:** the use of manual contact for evaluation and treatment of soft-tissue restriction and pain with the eventual goal of the relief of those symptoms to improve motion and function

# ***Fascia Anatomy***

- **Continuous structure that surrounds and integrates tissue throughout body**
- **Provides tissue form, lubrication, nutrition, stability, integrity, and support and assists in muscular strength during eccentric contractions**



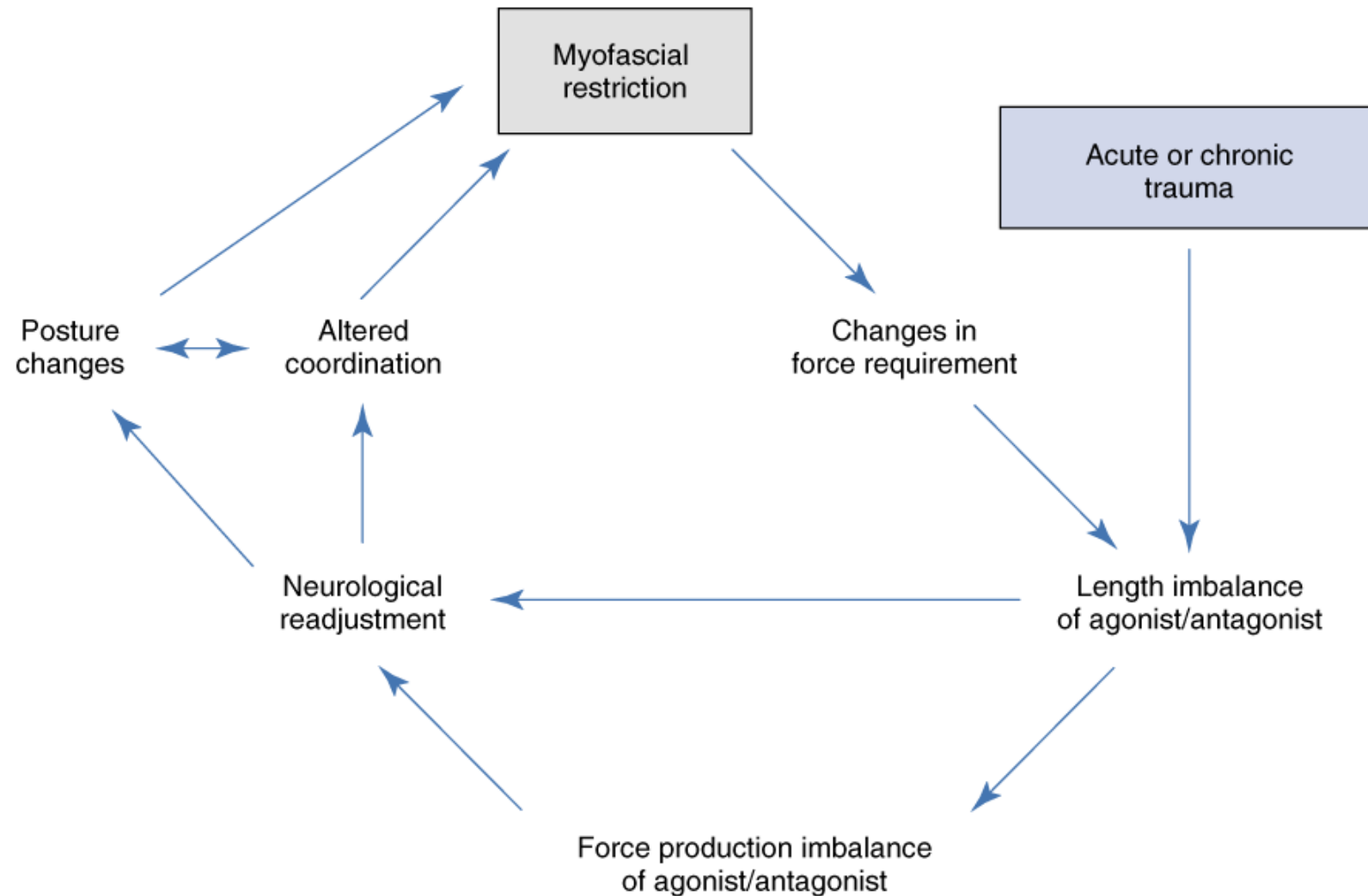
# ***Fascial Layers***

- **Superficial**
- **Deep**
- **Subserous**

# ***Biomechanical Considerations***

- **Biomechanical impact of fascia scar tissue**
- **Nonacute and acute biomechanical forces**
- ***Myofascial release* a misnomer**

# *Pathology of Myofascial Restriction*



# ***Myofascial Release (MFR)***

## ***Treatment Guidelines***

- **Palpation: normal mobility, superficial to deep, autonomic responses**
- **Treatment time: 3-5 min**
- **Avoid bruising**
- **Stabilize tissue and take up slack**
- **Apply MFR with your upper extremities relaxed**
- **Can use various stroking techniques**

# ***Myofascial Release Strokes***

- **J-stroke**
- **Oscillation**
- **Wringing**
- **Stripping**
- **Arm pull and leg pull**
  
- **Indications, contraindications,  
precautions**

**trigger point:** “a focus of hyperirritability in a tissue that, when compressed, is locally tender and, if sufficiently hypersensitive, gives rise to referred pain and tenderness, and sometimes to referred autonomic phenomena and distortion of proprioception” (Travell and Simons 1983)

# ***Myofascial Trigger Points***

- **Taut band of muscle tissue**
- **Central focal point of tenderness and thickness**
- **Focal point—appears as nodule**
- **Pressure on the nodule—can cause referred pain or autonomic response**
- **Active trigger points**
- **Latent trigger points**

# ***Trigger Point Characteristics***

- **Dull ache or sharp stabbing**
- **Pressure can cause referred pain**
- **More irritable trigger point = more severe referred pain**

***(continued)***



# ***Trigger Point Characteristics***

- **Each muscle has characteristic referred pain patterns**
- **Causes of pain**
- **Ways to ease pain**

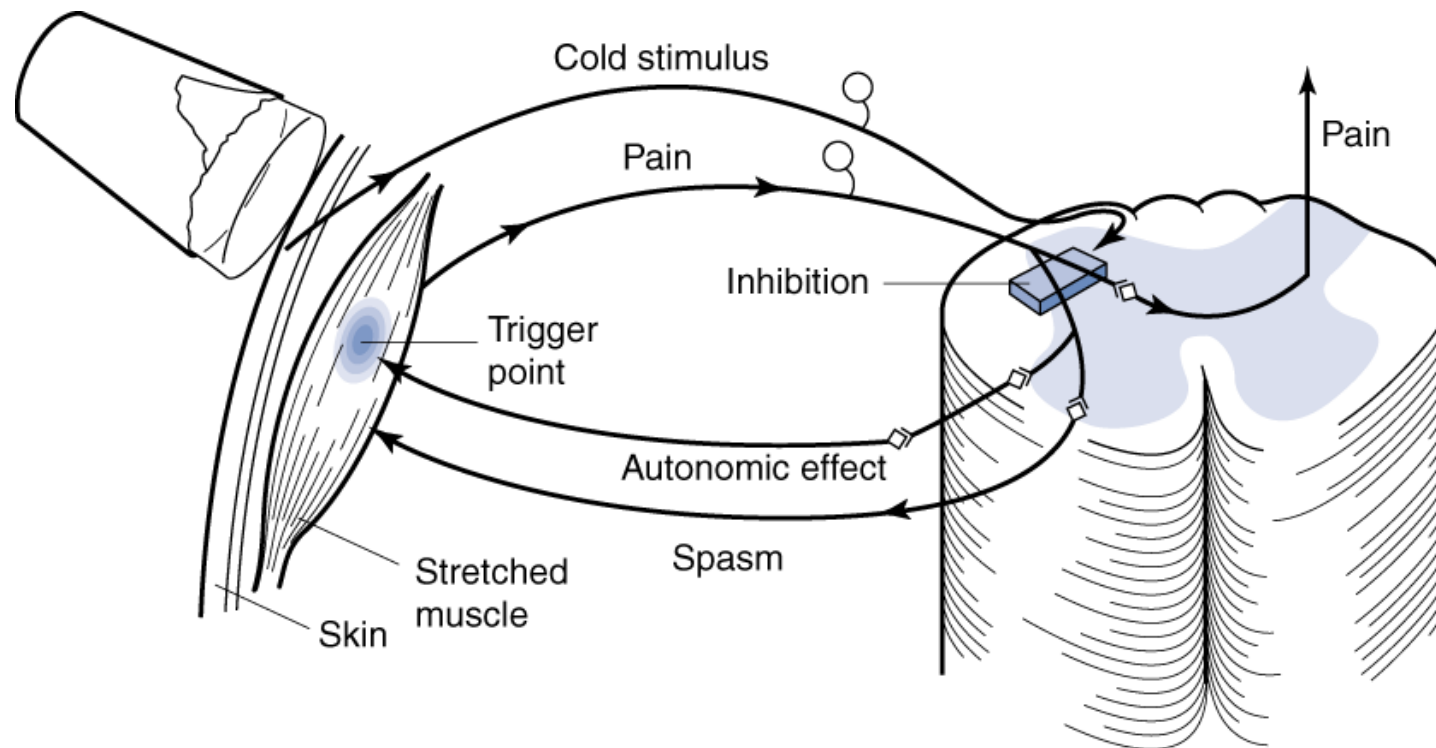
# ***Causes of Trigger Points***

- **Injury**
- **Overload**
- **Fatigue**
- **Acute**
- **The exact mechanism of trigger points is really unknown and is only theory at this time.**

# ***Trigger Point Treatment***

- **Trigger point examination**
- **Treatment**
  - **Ice stroking along muscle**
  - **Ischemic compression**
  - **Stripping of the taut band**
  - **PNF, hot packs, ultrasound, electrical stimulation**
- **Precautions**

# ***Effect of Trigger Point Release Via Ice-Stretch on Neural Pathways***



***Adapted from Simons, Travell, and Simons 1999.***

# ***Trigger Points and Stretching***

**Trigger point treatment must be accompanied by stretching of the muscle to be most effective.**

**muscle energy technique:** a manual technique that involves the voluntary contraction of a muscle in a precisely controlled direction, at varying levels of intensity, against a distinct counterforce applied by the sport rehabilitation specialist. Essentially, it is the use of muscle contraction to correct a joint's malalignment which occurs when the body becomes unbalanced.

# ***Muscle Energy Theory***

- **Malalignments occur due to muscle spasm, weakness, restricted mobility etc.**
- **Muscle contraction can be isometric, eccentric, concentric.**
- **Patient controls magnitude.**
- **A barrier restricts normal motion.**
- **Muscle contraction allows for improved relaxation and motion.**

# ***Muscle Energy Application***

- Patient's segment is placed at end of barrier.
- Patient contracts muscle while rehabilitation specialist offers resistance.
- Muscle contraction is submaximal isometric contraction (2 oz), 5-10 s.
- Patient relaxes; segment is passively moved to the new barrier.
- 3-5 repetitions are performed.



# ***Muscle Energy Application***

- Repeat as above for isotonic contraction but allow thru full ROM
- Resistance should allow motion at an even and controlled speed.
- Refractory period is needed
- Patient relaxes; segment is passively moved to the new barrier.
- 3-5 repetitions are performed.

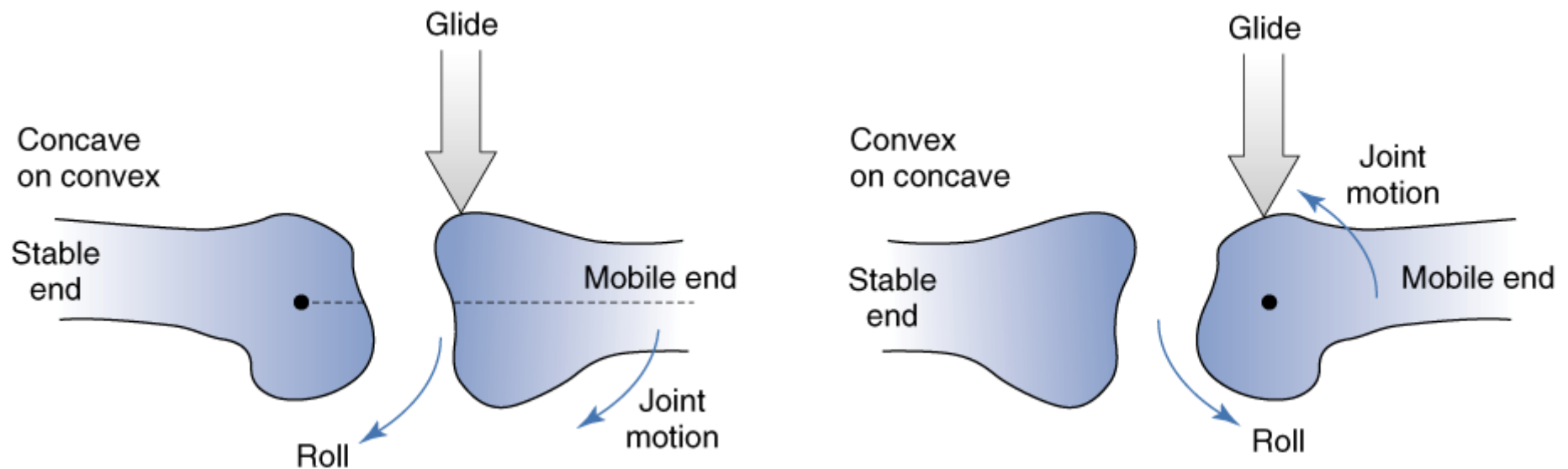
**joint mobilization:** passive movement of a joint in either physiological or accessory movements to either relieve pain or improve motion

[www.fisiokinesiterapia.biz](http://www.fisiokinesiterapia.biz)

# ***Basic Concepts of Joint Mobilization***

- **Physiological vs. accessory motion  
Accessory-Jt. Play and component  
motion**
- **Arthrokinematics; five types of motion  
within joint**
- **Concave and convex rules**
- **Capsular patterns of motion**

# ***Rules for Concave-on-convex and Convex-on-concave Joint Surfaces***



[www.fisiokinesiterapia.biz](http://www.fisiokinesiterapia.biz)

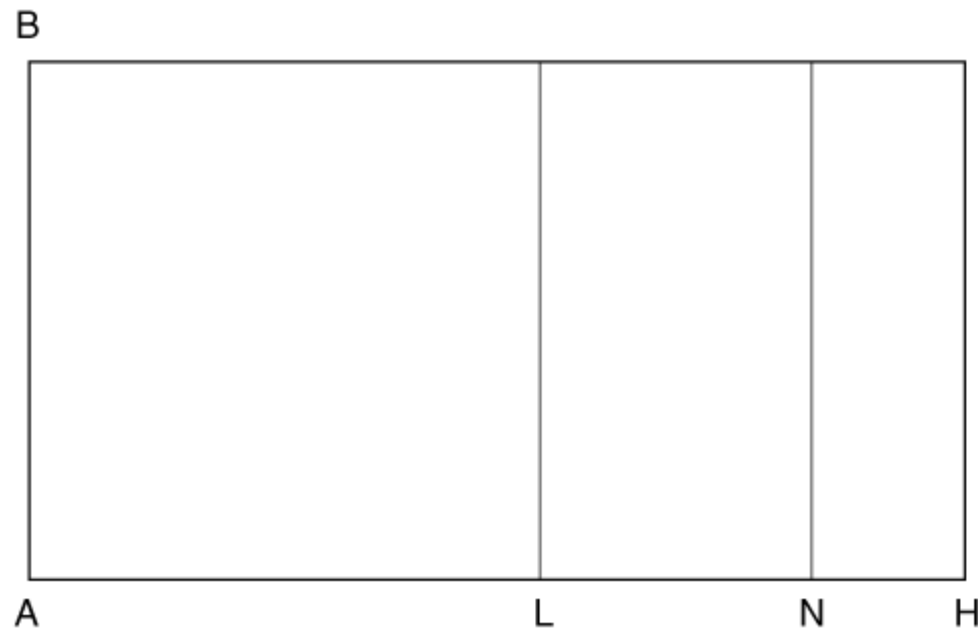
# ***Effects of Joint Mobilization***

- **Joint mechanoreceptors are stimulated to inhibit pain stimulation and can cause muscle relaxation.**
- **Distraction and gliding can cause improved synovial fluid movement to improve nutrition to the joint.**
- **Stretch of the capsule can cause plastic deformation of collagen to improve motion.**

# ***Application of Joint Mobilization***

- **Grades of movement**
- **Using a movement diagram**
- **Normal joint mobility**
- **Close- and loose-packed positions**
- **Rules for application**
- **Indications, precautions,  
contraindications**

# ***Movement Diagram***



## **Key**

- A = Beginning of movement
- N = Normal limit of ROM
- L = Abnormal limit of ROM
- H = Hypermobility range
- B = Intensity