

특강 1



연제 : 근막 통증 증후군의 치료

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논문: 암성통증 환자를 위한 경막외 Morphine 투여시 적절한  
Butorphanol 혼합 용량 등 80여편

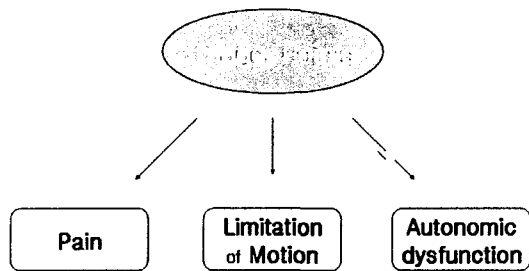
저서: 통증의학(둘째판) 등 5편

**Myofascial Pain Syndrome**

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## Myofascial Pain Syndrome?



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## History

- Trigger point Phenomenon (1843)
- Historically used term
  - Myalgia, Myositis, Myofascitis, Fibromyositis, Fibrositis, Muscular rheumatism, Muscular strains, Idiopathic myalgia, Pressure Pain....
- Myofascial trigger points
  - Jannet G. Travell (1952)

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# Wide Spread Nature of MTrPs

### Common diagnoses

Tension-type headache

Frozen shoulder

Epicondylitis

Carpal tunnel syndrome

Atypical angina pectoris

Lower back pain

### Common trigger point Causes

Sternocleidomastoid, upper trapezius, posterior cervical, and temporalis

Subscapularis, supraspinatus, pectoralis major and minor, deltoid muscles

Finger and hand extensors, supinator, and triceps brachii

Scaleni, finger extensors

Left pectoralis, major intercostals

Quadratus lumborum, iliopsoas, thoracolumbar paraspinals, rectus abdominis, piriformis, gluteus maximus and medius

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## Synopsis

- Pathophysiology
  - Energy Crisis
- Clinical Diagnosis
- Treatment
  - Stretch and Spray
  - Trigger point injection
  - others

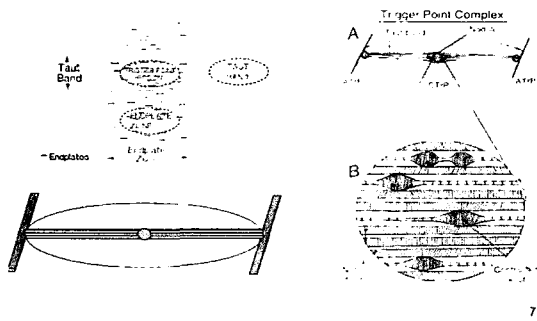
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## Glossary

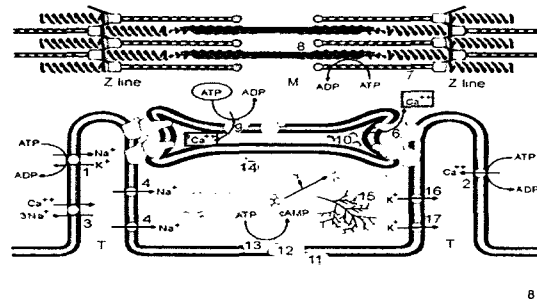
- Myofascial Trigger Points
  - A hyperirritable spot in skeletal muscle
  - A hypersensitivity palpable nodule in a taut band
  - Referred pain, motor dysfunction autonomic phenomena.

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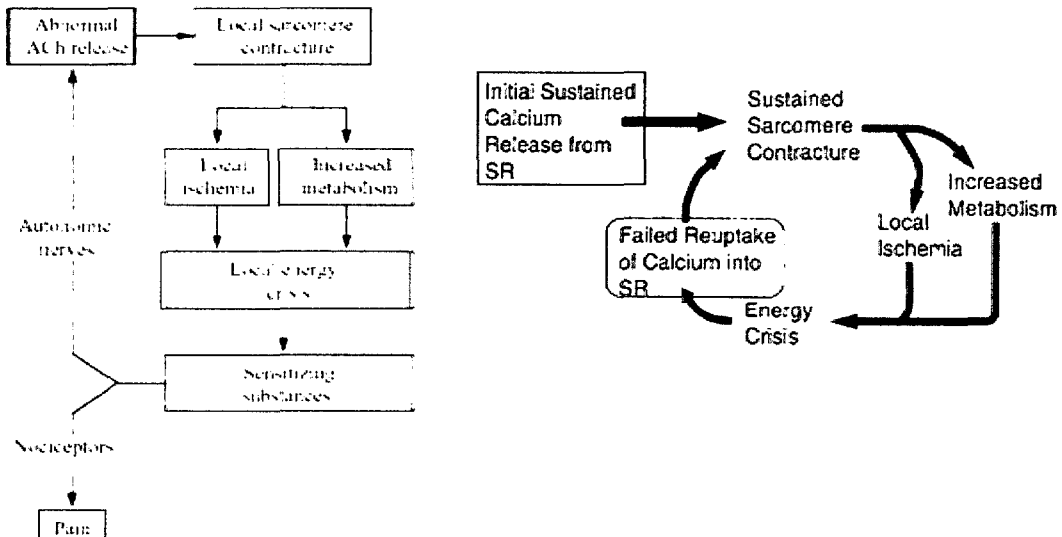
## Taut band & Nodule



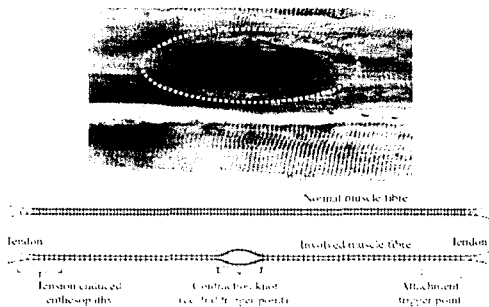
## Calcium re-uptake



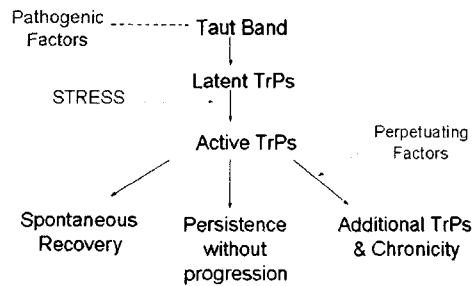
## Energy Crisis



## Contraction Knots



## Natural Course of Myofascial Pain caused by Trigger Points

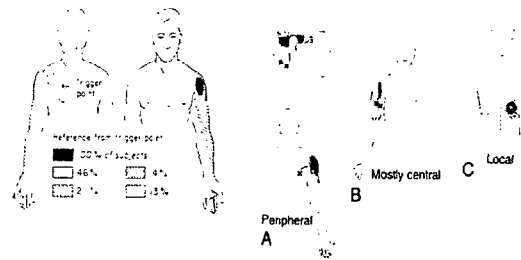


## Clinical Features

- **Trigger Point Pain**
  - Mild to Burning
  - Continuous or Periodic
  - Active or Latent
- **Referred Pain**
  - Pain felt at distance
  - Reproducibly related of its site of origin

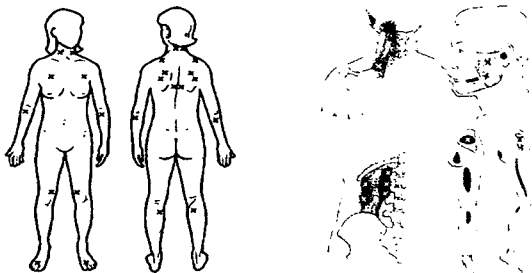
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## Referred Pain



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## Prevalent Region



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## Lab and Imaging

- No confirmatory laboratory findings
- No imaging study helping Dx. of TrPs.

History

Physical Exam

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## Diagnostic Features of Active TrP

- **History**
  - Regional aching pain complaint
  - Onset
    - repetitive muscle overload
  - Pain intensity
    - related to movement or positioning

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## Diagnostic Features of Active TrP

- **Diagnostic Findings**
  - Painful limit to stretch range of motion
  - Palpable taut band with exquisitely tender nodule
  - Familiar pain response (Jump sign)

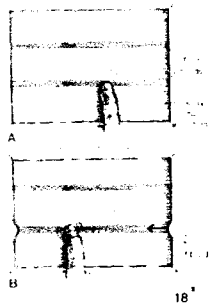
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## Diagnostic Features of Active TrP

### • Confirmatory Findings

#### – Local twitch response

- A transient contraction of taut band
- Contraction of the fibers in a response to stimulation
- Snapping palpation or needling

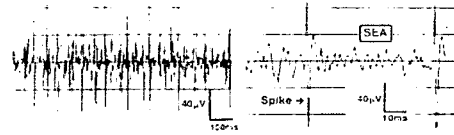


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## Diagnostic Features of Active TrP

### • Confirmatory Findings

- Demonstration of Endplate noise from and EMG needle gently inserted into the MTrP



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## Recommend Criteria for Identifying a Latent or an Active Trigger Point

### Essential Criteria

1. Taut band palpable (if muscle accessible)
2. Exquisite spot tenderness of nodule
3. Patient's recognition
4. Painful limit to full stretch range of motion

### Confirmatory Observations

1. Visual or tactile identification of LTR
2. Imaging of a LTR by needle penetration
3. Pain or altered sensation on compression
4. EMG demonstration of Spontaneous Electrical Activity (SEA)

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## Differential Diagnosis

- Fibromyalgia
- Articular dysfunction
- Temporomandibular dysfunction
- Occupational myalgia
- Nonmyofascial TrPs
- Posttraumatic hyperirritability syndrome

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# DDx. MTrPs & Fibromyalgia

## Myofascial trigger points

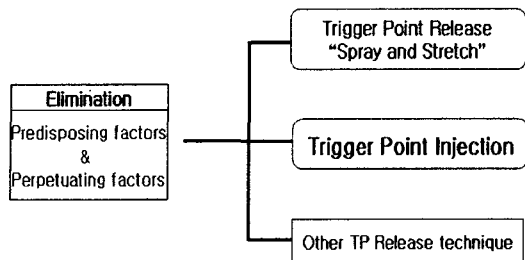
Peripheral muscular origin  
 Female to male ratio 1:1  
 Local or regional pain  
 Focal tenderness  
 Muscle feels tense (taut bands)  
 Restricted stretch range of motion  
 Examination for MTrPs anywhere  
 Immediate response to MTrP injection  
 May also have fibromyalgia

## Fibromyalgia

Central nervous system origin  
 Female to male ratio 4.9 : 1  
 Widespread, general pain  
**Widespread** tenderness throughout  
 Muscle feels soft and doughy  
 Commonly hypermobile  
 Examination for prescribed tender points  
 Delayed response to MTrP injection  
 Nearly all also have MTrPs

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## Treatment



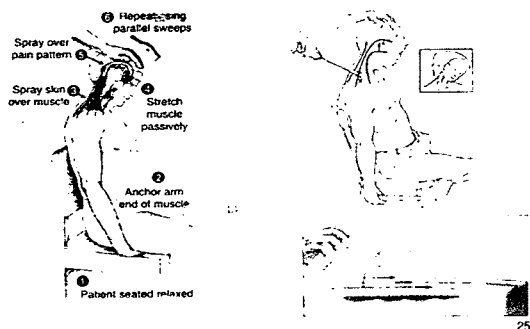
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## Stretch and Spray

- Not “Spray and Stretch”

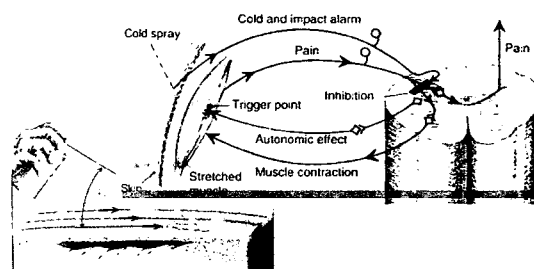
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## Stretch and Spray



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## Cold Spray



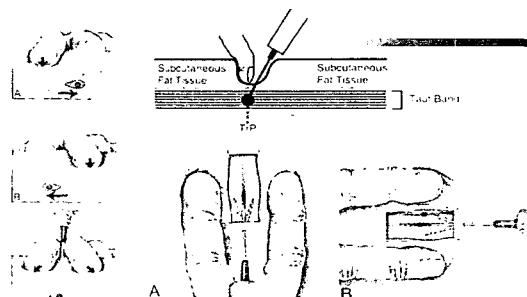
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## Trigger point injection

- Dry needling
- Needling with adjuvants
  - Local anesthetics
  - Normal saline
  - Low dose steroid (0.05% dexamethasone)
- Myotoxic effect
  - Dependent on local anesthetic concentration
  - Least myotoxic : Procaine

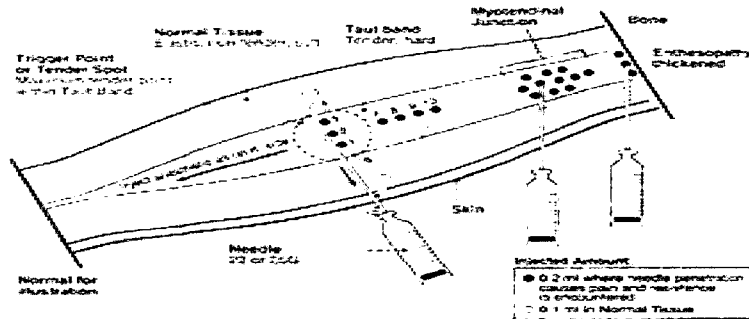
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## Trigger point injection



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# Trigger point injection



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## Contraindication of TPI

- Anticoagulation or bleeding disorders
- Aspirin ingestion within three days or injection
- Presence of local or systemic infection
- Allergy to anesthetic agents
- Acute muscle trauma
- Extreme fear of needles

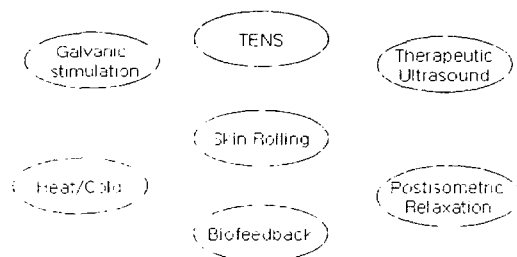
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## Complication of TPI

- Skin infection
- Pneumothorax
- Needle breakage
- Hematoma formation

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## Trigger Point Release



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## New Treatment

• Botulinum A toxin (Botox®)  
*Pain 2000;05:101-5*

• Magnetic stimulation  
*Clinical Neurophysiology 2003;114:350-9*

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