

Fibromyalgia Update

허 룡

가톨릭의대 인천성모병원 신경외과학교실

Fibromyalgia (FM)

- Chronic, widespread pain with tenderness, often occurring with multiple symptoms associated with high psychosocial stress

ACR 1990 Criteria for the Classification of FM

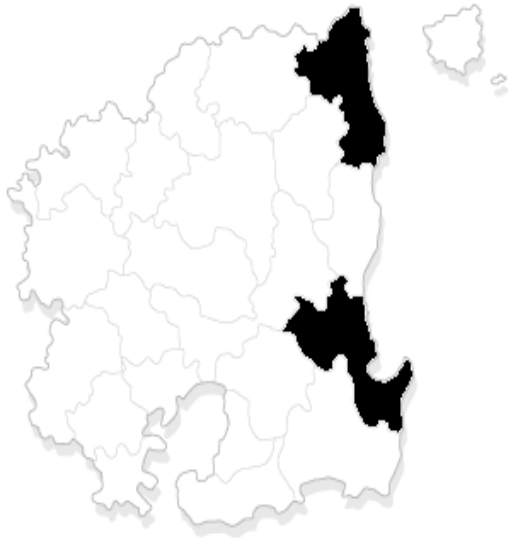
- History of widespread pain
- Definition
 - Pain in both sides of the body, above and below the waist, and
 - Axial skeletal pain (cervical spine, anterior chest, thoracic spine, or low back)
- Pain in 11 of 18 tender point sites on digital palpation

ACR=American College of Rheumatology.
Wolfe F et al. Arthritis Rheum. 1990;33:160-172.

FM-Associated Symptoms

- | | |
|----------------------------------|--|
| • Fatigue | • Anxiety |
| • Sleep disturbance | • Depression |
| • Headache | • Failure to cope |
| • Subjective joint swelling | • Poor self-reported state of health |
| • Morning stiffness | • Poor self-reported physical function |
| • Paresthesia | • Poor emotional function |
| • Irritable bowel syndrome (IBS) | |
| • Dysmenorrhea | |

우리나라 유병률



- 경상북도 포항, 울진
- 1028명(2004년)
- 만성 전신성 통증
 - 144/1028 cases (14.0%)
 - F:M=130:14
 - 연령증가에 따른 증가 추세
- 섬유근통
 - 23/1028 cases (2.2%)
 - F:M=21:2
 - 연령 증가에 따른 증가 추세

Kim SH JKRA 2006;13(1):1-8

Subgroups of FM Patients

Group 1 (n=50)

- Low depression/anxiety
- Not very tender
- Low catastrophizing
- Moderate control over pain

Psychological factors **neutral**

Group 2 (n=31)

- Tender
- High depression/anxiety
- Very high catastrophizing
- No control over pain

Psychological factors **worsening** symptoms

Group 3 (n=16)

- Extremely tender
- Low depression/anxiety
- Very low catastrophizing
- High control over pain

Psychological factors **improving** symptoms

2010 FM Diagnostic Criteria

Criteria

A patient satisfies diagnostic criteria for fibromyalgia if the following 3 conditions are met:

- 1) Widespread pain index (WPI) ≥ 7 and symptom severity (SS) scale score ≥ 5 or WPI 3-6 and SS scale score ≥ 9 .
- 2) Symptoms have been present at a similar level for at least 3 months.
- 3) The patient does not have a disorder that would otherwise explain the pain.

Ascertainment

- 1) WPI: note the number areas in which the patient has had pain over the last week. In how many areas has the patient had pain? Score will be between 0 and 19.

Shoulder girdle, left	Hip (buttock, trochanter), left	Jaw, left	Upper back
Shoulder girdle, right	Hip (buttock, trochanter), right	Jaw, right	Lower back
Upper arm, left	Upper leg, left	Chest	Neck
Upper arm, right	Upper leg, right	Abdomen	
Lower arm, left	Lower leg, left		
Lower arm, right	Lower leg, right		

- 2) SS scale score:

Fatigue
Waking unrefreshed
Cognitive symptoms

For the each of the 3 symptoms above, indicate the level of severity over the past week using the following scale:

- 0 = no problem
- 1 = slight or mild problems, generally mild or intermittent
- 2 = moderate, considerable problems, often present and/or at a moderate level
- 3 = severe: pervasive, continuous, life-disturbing problems

Considering somatic symptoms in general, indicate whether the patient has:*

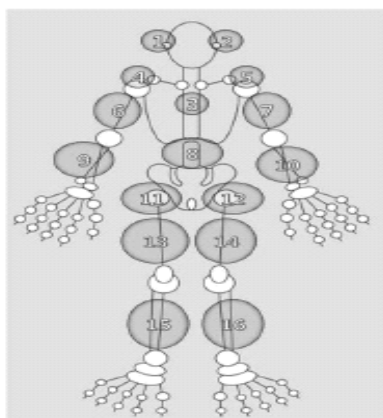
- 0 = no symptoms
- 1 = few symptoms
- 2 = a moderate number of symptoms
- 3 = a great deal of symptoms

The SS scale score is the sum of the severity of the 3 symptoms (fatigue, waking unrefreshed, cognitive symptoms) plus the extent (severity) of somatic symptoms in general. The final score is between 0 and 12.

* Somatic symptoms that might be considered: muscle pain, irritable bowel syndrome, fatigue/tiredness, thinking or remembering problem, muscle weakness, headache, pain/cramps in the abdomen, numbness/tingling, dizziness, insomnia, depression, constipation, pain in the upper abdomen, nausea, nervousness, chest pain, blurred vision, fever, diarrhea, dry mouth, itching, wheezing, Raynaud's phenomenon, hives/welts, ringing in ears, vomiting, heartburn, oral ulcers, loss of/change in taste, seizures, dry eyes, shortness of breath, loss of appetite, rash, sun sensitivity, hearing difficulties, easy bruising, hair loss, frequent urination, painful urination, and bladder spasms.

2010 년 섬유근통 증후군 진단기준

1. 지난 한 주간 통증이 있었던 부위에 '✓' 표시하십시오.



번호	신체 부위	통증 여부
1	오른쪽 목관절	
2	왼쪽 목관절	
3	가슴	
4	오른쪽 어깨	
5	왼쪽 어깨	
6	오른쪽 팔 윗부분(어깨에서 팔꿈치까지)	
7	왼쪽 팔 윗부분(어깨에서 팔꿈치까지)	
8	배(복부)	
9	오른쪽 팔 아랫부분(팔꿈치에서 손목까지)	
10	왼쪽 팔 아랫부분(팔꿈치에서 손목까지)	
11	오른쪽 엉덩이	
12	왼쪽 엉덩이	
13	오른쪽 허벅지	
14	왼쪽 허벅지	
15	오른쪽 종아리	
16	왼쪽 종아리	
17	목	
18	등	
19	허리	

2. 당신이 지난 한 주 동안 생활하면서 느꼈던 다음 증상정도를 □에 '✓' 표시하십시오.

가. 지난 한 주간 얼마나 피곤했습니까?

- ☐ 0. 전혀 피곤하지 않았다.
☐ 1. 약간 또는 가끔씩 피곤했다.
☐ 2. 상당히 또는 자주 피곤했다.
☐ 3. 심각하게 지속적으로 생활이 힘들 정도로 피곤했다.

나. 지난 한 주간 아침에 잠에서 깨어날 때의 기분은 어떠했습니까?

- ☐ 0. 상쾌했다.
☐ 1. 약간 또는 가끔씩 상쾌하지 않았다.
☐ 2. 상당히 또는 자주 상쾌하지 않았다.
☐ 3. 심각하게 지속적으로 생활이 힘들 정도로 상쾌하지 않았다.

다. 지난 한 주간 기억력이나 집중력 정도는 어떠했습니까?

- ☐ 0. 전혀 문제가 없었다.
☐ 1. 약간 또는 가끔씩 문제가 있었다.
☐ 2. 상당히 또는 자주 문제가 있었다.
☐ 3. 심각하게 지속적으로 생활이 힘들 정도로 문제가 있었다.

라. 지난 한 주간 다음 신체증상의 정도는 어떠했습니까?

(보기) 근육통, 과민성 대장염, 피로감, 건망증, 근력저하, 두통, 복통, 저린 증상, 어지럼, 불면증, 우울증, 변비, 상복부 통증, 메스꺼움, 신경과민, 흉통, 흐려보임, 열감, 설사, 구강건조, 가려움, 숨쉬기가 힘들어 책책거림, 레이노 현상, 두드러기, 귀 울음, 구토, 속 쓰림, 구강 궤양, 입맛 변화, 발작, 안구건조, 습가쁨, 식욕부진, 피부발진, 햇빛 민감반응, 청력저하, 쉽게 멍들, 탈모, 빈뇨, 배뇨통, 방광 경련

- ☐ 0. 증상이 전혀 없었다.
☐ 1. 증상이 약간(몇 개 정도)은 있었다.
☐ 2. 증상이 중 정도(50% 정도)로 있었다.
☐ 3. 증상이 상당히 많이 있었다.

2010년 섬유근통 증후군 진단기준

1. Widespread pain index (WPI) (점수범위 0~19 점) = 점	2. Symptom severity (SS) scale (점수범위 0~12 점) 가. 피곤함 또는 피로정도 = 점 나. 아침에 잠에서 깨어날 때의 기분 = 점 다. 인지장애 정도 = 점 라. 신체증상 정도 = 점 합계 (가+나+다+라) = 점
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섬유근통의 진단은 다음 3가지 조건을 충족하여야 한다

1. WPI ≥ 7 + SS scale score ≥ 5 또는 WPI 3~6 + SS scale score ≥ 9
2. 증상이 비슷한 수준에서 최소 3개월 정도는 있어야 한다.
3. 환자의 통증을 설명할 수 있는 다른 질환은 없어야 한다.

Case

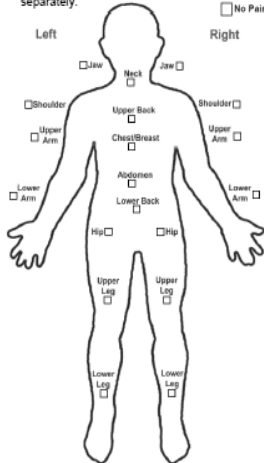
- 49세 여자. 10여년 된 전신성 통증을 주소로 내원함
- 10여년 전 교통사고 이후 증상들이 나타나기 시작했다고 생각함
- 최근 통증이 더 악화되었으며, 밤에 더 심해짐
- 통증이 심해 잠들기가 힘들며, 잘 자야 2시간 정도임
- 늘 맥이 없고 식욕도 매우 저하됨
- 과거 우울증으로 치료한 병력이 있으며, 기분이 늘 안좋고 자주 운다고 함
- 하루 종일 몸이 뻣뻣하고 멍하며, 기억력도 많이 떨어짐
- 어지러움, 가슴 두근거림, 발한 등을 호소함
- 세번 정도 실신하여 응급실 방문한 적이 있으며, 심장내과 및 신경과 진료 및 검사상 이상 없다고 들었음
- 자주 손발이 저리고 감각이 떨어진 느낌
- 최근 빈뇨 및 배뇨시 통증으로 진료 중이나 검사상 이상 없다고 들음

- 여러 약물들을 복용 중이나 도움이 안됨
- 신경학적 검사를 포함한 신체검사 및 검사실 소견상 모두 정상
- 압통점 18/18, 전신에 걸쳐 압통을 느끼는 듯함
- Nortriptyline 5 mg po hs(x 7 days) → sl. improved body pain(VAS 10→7) & female urethral synd./adverse effect(-)
- Nortriptyline 10 mg po hs (x 21 days) → improved body pain(VAS 7→5) & female urethral synd./drowsy & dry mouth
- Nortriptyline 5 mg에 Pregabalin 75 mg hs 를 추가함 → "통증이 줄긴 했는데(VAS 7→4), Nortriptyline 10 mg 보단 약하다. adverse effect(-)"
- 현재 Nortriptyline 5 mg hs에 Pregabalin 75 mg bid로 통증이 많이 개선됨(VAS 2-3 정도 유지)

Modified ACR 2010 FM Diagnostic Criteria

Fibromyalgia Symptoms (Modified ACR 2010 Fibromyalgia Diagnostic Criteria)

1. Please indicate below if you have had pain or tenderness over the past 7 days in each of the areas listed below. Check the boxes in the diagram below for each area in which you have had pain or tenderness. Be sure to mark right and left sides separately.



2. Using the following scale, indicate for each item your severity over the past week by checking the appropriate box.

No problem

Slight or mild problems: generally mild or intermittent

Moderate: considerable problems; often present and/or at a moderate level

Severe: continuous, life-disturbing problems

FDC:

A & B must be true:

A. Item 4 (yes)

B. Item 5 (no)

Either C or D must be true:

C. WPI ≥ 7 & SS ≥ 5

D. WPI 3-6 & SS ≥ 9

Fibromyalgia-ness:

WPI+SS ≥ 13 cutpoint

3. During the past 6 months have you had any of the following symptoms?

	No	Yes
a. Fatigue	<input type="checkbox"/>	<input type="checkbox"/>
b. Trouble thinking or remembering	<input type="checkbox"/>	<input type="checkbox"/>
c. Waking up tired (unrefreshed)	<input type="checkbox"/>	<input type="checkbox"/>

4. Have the symptoms in questions 2-3 and pain been present at a similar level for at least 3 months?

No ☐ Yes ☐

5. Do you have a disorder that would otherwise explain the pain?

No ☐ Yes ☐

Adapted from Wolfe et al. Arth Care & Res (2010), 62:600-610.

Differential Diagnosis

Mechanical overuse

Drugs

Statins and fibrates

Antimalarials

Endocrinopathies

Hypothyroidism

Hyperparathyroidism

Cushing's syndrome

Diabetes mellitus

Malignancy

Infections

Hepatitis C

HIV

Rheumatologic diseases

Rheumatoid arthritis (12%)

Systemic lupus erythematosus (22%)

Sjögren's syndrome (11%)

Ankylosing spondylitis

Polymyalgia rheumatica

Metabolic myopathy

Inflammatory myositis

Polymyositis

Dermatomyositis

Connective tissue disease

Regional pain syndrome

Baseline characteristics of the 336 Korean patients with fibromyalgia

Variable	Total
Age, years	47.9 ±10.9
Women (%)	301/336 (89.6)
Symptom duration, years	8.3±8.1
Disease duration, years	2.0±3.0
Education, years	11.0±4.0
Employment (%)	107/325 (32.9)
Marital status, single/married/ divorced/ separated/ widowed	30/273/18/4 /9
Insurance, insured/beneficiary	298/33
Alcohol, no/past/current	231/31/74
Smoking, never/ex-smoker/smoker	288/33/15
Diabetes mellitus (%)	20/336 (6.0)
Hypertension (%)	59/335 (17.6)
Hepatitis B or C (%)	14/336 (4.2)
Thyroid disease (%)	28/336 (8.3)
Affective disorder (%)	89/335 (26.6)
Accompanying rheumatologic disease (%)	88/336 (26.2)

Except where indicated otherwise, values are the mean ± SD.

(Kim SH, 2010, in press)

Accompanying rheumatologic disease

Rheumatic diseases: 88/336 (26.2)

Behcet's disease: 12/336 (3.6)

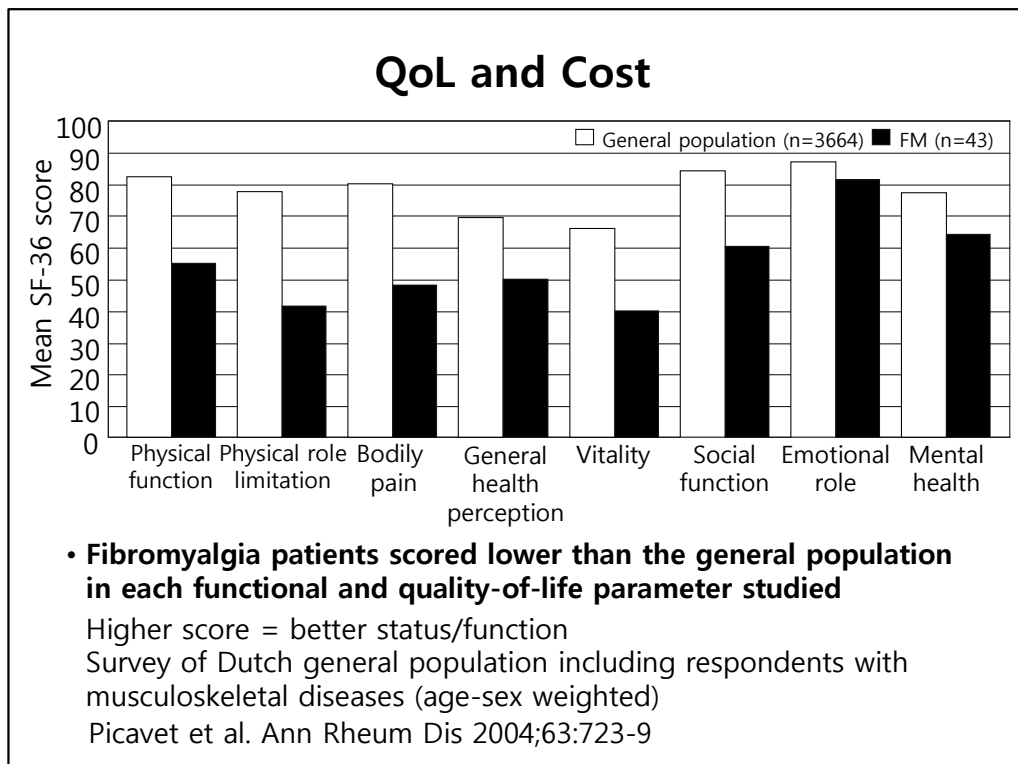
Osteoarthritis: 32/336 (9.5)

Rheumatoid arthritis: 26/336 (7.7)

Sjögren's syndrome: 5/336 (1.5)

Systemic lupus erythematosus: 9/336 (2.7)

Others (gout, spondyloarthropathy): 4/33.6 (1.2)



Cost and Burden of FM

538 FM patients, 7 years

10 outpatient medical visits per year

1 hospitalization every 3 years

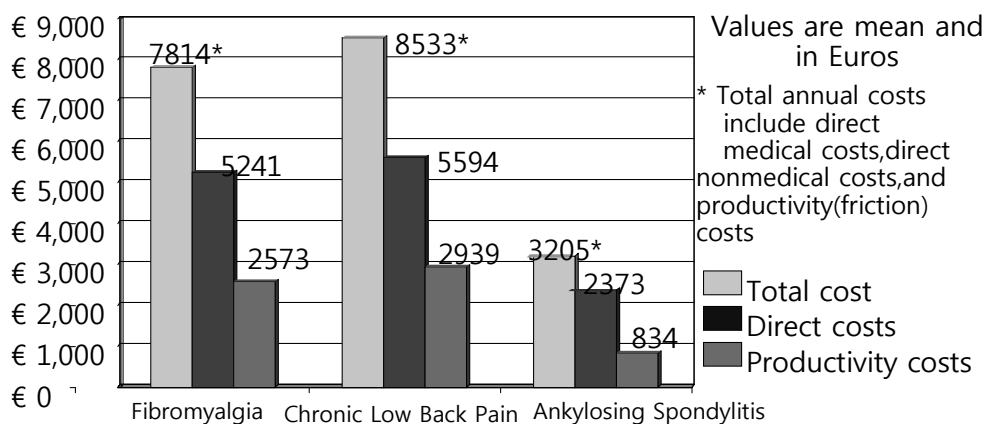
2.7 FM-related drugs per 6 months study period

Increasing costs over the course of the study

1996: US\$ 2274 yearly per patient cost

Wolfe F. Arthritis Rheum 1997;40:1560-70

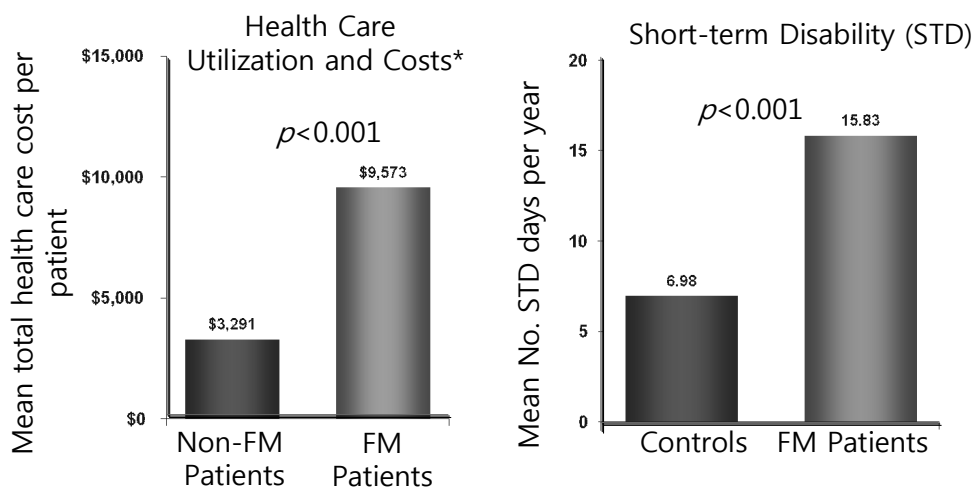
Annual cost per patient for 3 chronic musculoskeletal conditions in the Netherlands



FM would cost €980 million annually in The Netherlands (data from 2005).

Boonen A et al. Ann Rheum Dis 2005;64:396-402

Fibromyalgia Results in High Levels of Health Care Utilization and Loss of Productivity



STD=short-term disability.

*Over a 12-month period.

Berger et al. Int J Clin Pract 2007;61:1498-508; Brandenburg et al. APS 2007

**Diagnosis of FM Is Associated With
Reduced Health Care Costs**

Pathogenesis

Overlap Between Fibromyalgia and Related Syndromes

Fibromyalgia:
2% to 4% of population;
defined by widespread
pain and tenderness

Regional pain
syndromes:(e.g.,TMD,
tension HA,
idiopathic LBP)

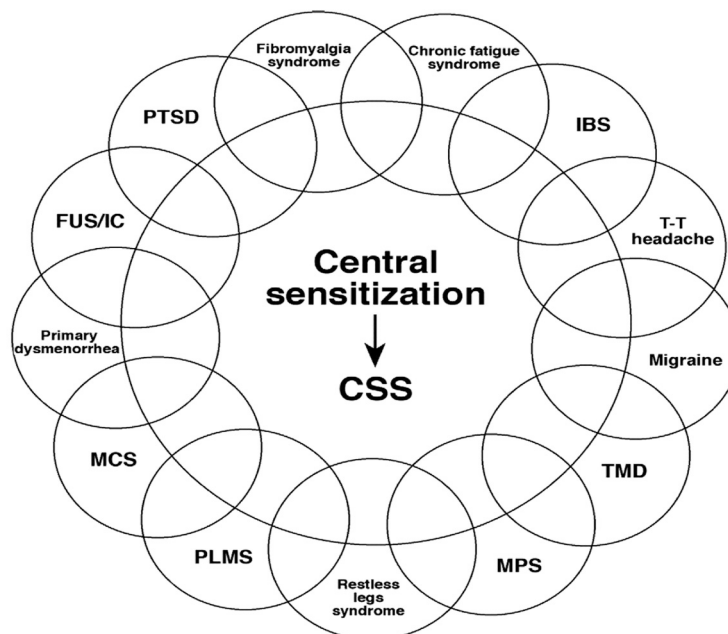
Pain and / or
Sensory
amplification

Chronic Fatigue Syndrome:
1% of population; fatigue
and 4/8 "minor criteria"

Somatoform Disorders: 4
% of population; multiple
unexplained symptoms
— no "organic" findings

Clauw et al. *Neuroimmunomodulation*. 1997;4:134-153.

Central Sensitivity Syndrome



“Stressors” Capable of Triggering These Illnesses (Supported by Case-Control Studies)

- Peripheral pain syndromes
- Infections (eg, parvovirus, EBV, Lyme disease, Q fever; not common URI)
- Physical trauma (automobile accidents)
- Psychological stress/distress
- Hormonal alterations (eg, hypothyroidism)
- Drugs
- Vaccines
- Certain catastrophic events (war, but not natural disasters)

Clauw et al. *Neuroimmunomodulation*. 1997;4:134-153.
McLean et al. *Med Hypotheses*. 2004;63:653-658.

Pathophysiologic Pathways

- Genetic factors^{1,2}
- Central pain augmentation³
- Autonomic/neuroendocrine dysfunction⁴
- Immune dysfunction⁵
- Structural changes⁶

¹Buskila D. *Arthritis Res Ther* 2006;8:218.

²Kato K. *Arthritis Rheum* 2006;54:1682-6.

³Harris RE. *Curr Pain Headache Rep* 2006;10:403-7.

⁴McBeth J. *Arthritis Rheum* 2007;56:360-71.

⁵Wang H. *J Rheumatol* 2008;35:1366-70.

⁶Kuchinad A. *J Neurosci* 2007;27:4004-7.

Genetics of Fibromyalgia

- **Clearly is a strong familial predisposition**

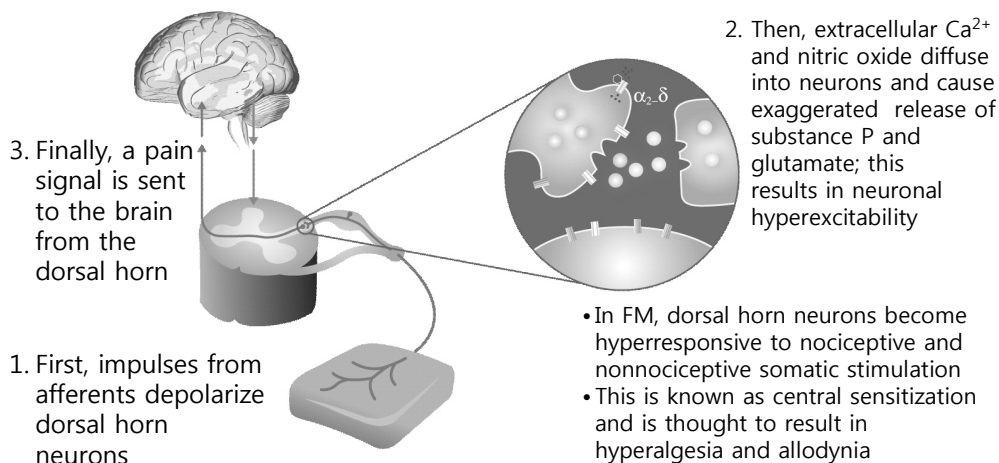
- Most recent work by Arnold et al suggest >8 odds ratio (OR) for first-degree relatives, and much less familial aggregation (OR 2) with affective disorders, much stronger with bipolar, OCD¹

- **Genes that may be involved**

- 5-HT_{2A} receptor polymorphism T/T phenotype²
- Serotonin transporter³
- Dopamine D4 receptor exon III repeat polymorphism⁴
- COMT (catecholamine o-methyl transferase)⁵
- Adrenergic receptors gene polymorphism⁶

¹Arnold *Arthritis Rheum* 2004;50:944-952, ²Bondy *Neurobiol Dis* 1999;6: 433-439, ³Offenbaecher *Arthritis Rheum* 1999;42:2482-2488, ⁴Buskila *Mol Psychiatry* 2004;9:73, ⁵Gursoy *Rheumatol Int* 2003;23:104-107, ⁶Vargas-Alarcón *Arthritis Rheum* 2009;60:2169-2173.

Pathophysiology of Fibromyalgia: The Role of Central Sensitization

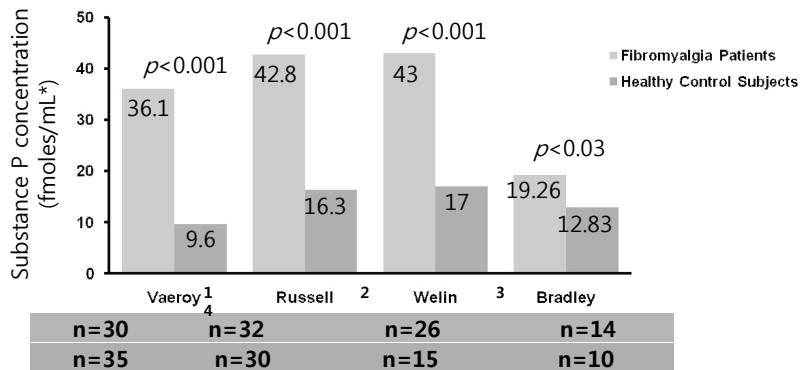


Despite extensive research, the pathogenesis of pain in FM is not clearly understood. However, central sensitization has emerged as a leading theory of disease mechanism.

Staud. *Arthritis Res Ther* [serial online]. 2006;8:208; Henriksson. *J Rehabil Med.* 2003; 41(suppl 41):89-94.

Fibromyalgia: Elevated Substance P in the Cerebrospinal Fluid of Patients

CSF Levels of Substance P in Fibromyalgia Patients vs Healthy Control Subjects Measured in 4 Separate Clinical Studies¹⁻⁴



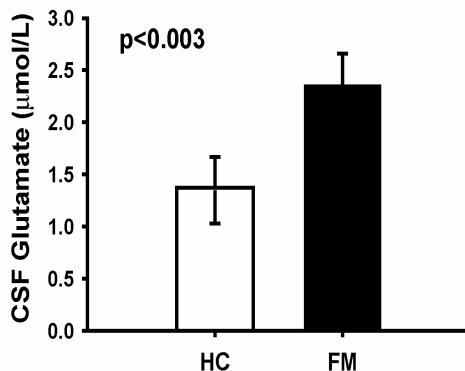
*fmoles/mL = femtomole/mL = 10^{-15} mole/mL.

¹Vaeroy et al. *Pain*. 1988;32:21-26; ²Russell et al. *Arthritis Rheum*. 1994;37:1593-1601;

³Welin et al. Myopain 1995: Abstracts from the 3rd World Congress on Myofascial Pain and Fibromyalgia. San Antonio, Tex: July 30 – August 3, 1995; ⁴Bradley et al. *Arthritis Rheum*. 1996;suppl 9:212. Abstr1109; ⁵Burke et al. In: *Goodman & Gilman's The Pharmacological Basis of Therapeutics*, 11th ed. 2006:681; ⁶Staud. *Arthritis Res Ther* [serial online]. 2006;8:208

FM Patients have Increased Levels of Glutamate (Glu) within the CSF

FM Patients Have Elevated CSF Levels of Glutamate



- 20 FM patients and 20 healthy pain free controls (HC).
- Cerebrospinal fluid sampled and assessed for levels of Glutamate (Glu).

Sarchielli et al. *JPain* 2007

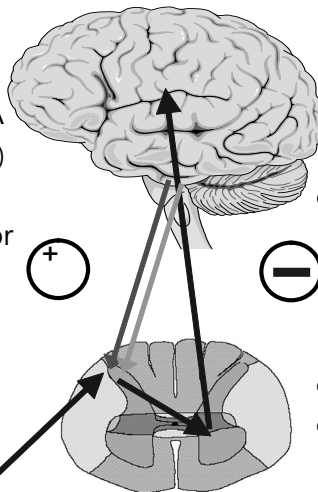
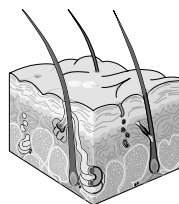
FM Patients have Decreased Levels of NE & Serotonin

- Low levels of norepinephrine and its metabolite, 3-methoxy, 4-hydroxy phenylglycol (MHPG) in CSF of FM
- Low levels of serotonin and its precursor, L-tryptophan, in the serum and low levels of the principal metabolite, 5-hydroxyindoleacetic acid (5-HIAA) in CSF of FM

Descending Influences on Nociceptive Processing

Facilitation

- Substance P
- Glutamate and EAA
- Serotonin (5HT_{2a, 3a})
- Neurotensin
- Nerve growth factor
- CCK

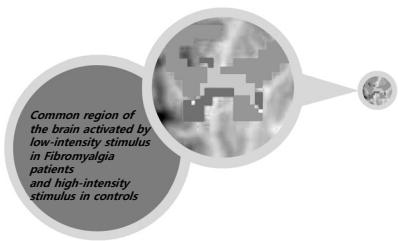


Inhibition

- Descending anti-nociceptive pathways
 - Norepinephrine – serotonin (5HT_{1a,b})
 - Opioids
 - GABA
 - Cannabinoids

Fibromyalgia May Be a Central Pain Processing Disorder: fMRI Evidence

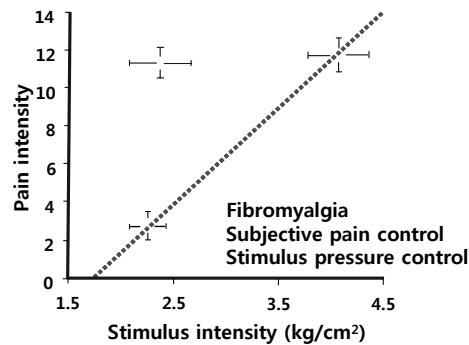
fMRI Studies Show Cortical/Subcortical Augmentation of Pain Processing in FM



Region of overlapping activity (Low-intensity stimulus in Fibromyalgia patients and high-intensity in control subjects)

Regions activated by high-intensity stimulus (4.16 kg/cm²) in control subjects

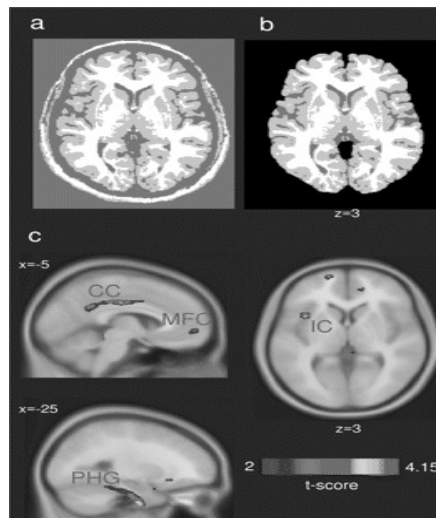
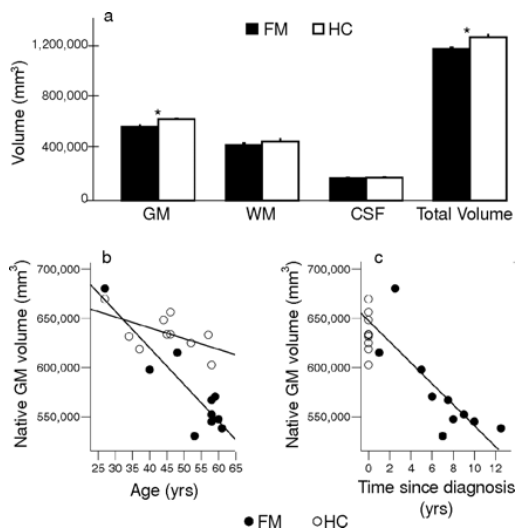
Regions activated by low-intensity stimulus (2.4 kg/cm²) in fibromyalgia patients



fMRI = functional magnetic resonance imaging.

Gracely et al. *Arthritis Rheum.* 2002;46:1333-1343.

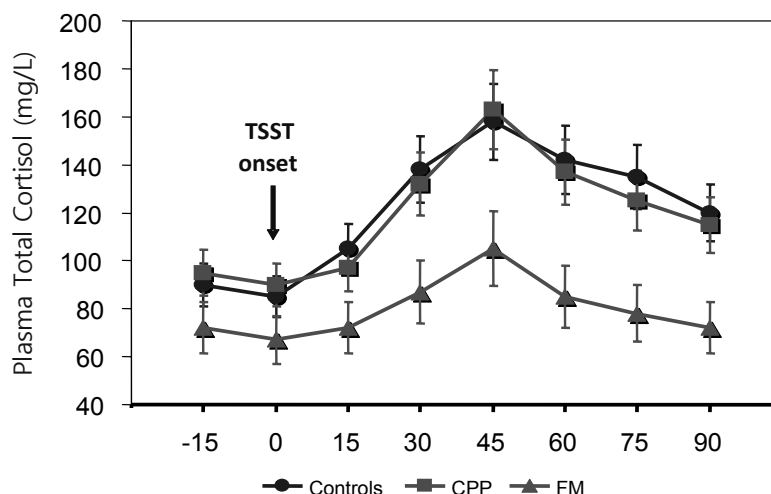
Accelerated Brain Gray Matter Loss in FM Patients: Premature Aging of the Brain?



Brain gray matter, white matter, CSF, and total volume in 10 patients with FM and 10 healthy control subjects. Each year of FM=9.5 years of aging.

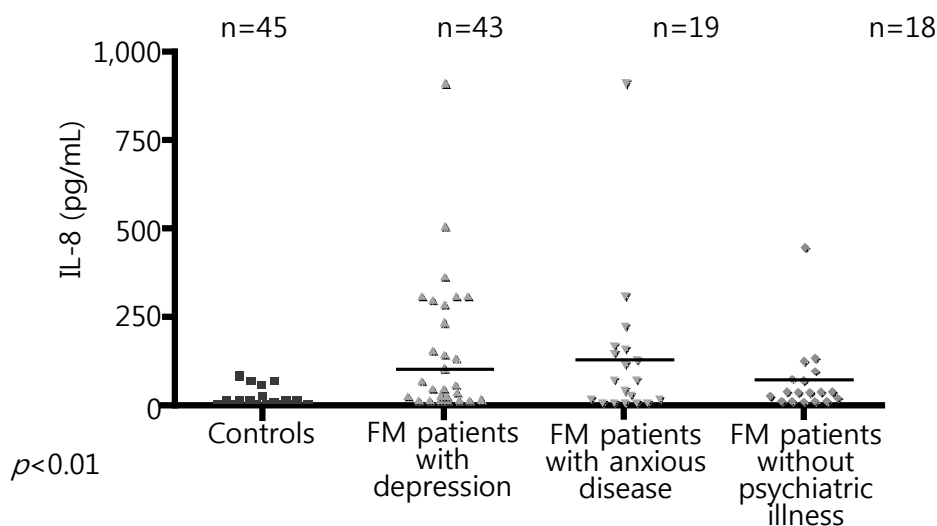
Kuchinad A, et al. *J Neurosci* 2007;27:4004-7.

HPA Dysregulation: FM Can Have Neuroendocrine Consequences



N=18 patients with CPP; 17 patients with FM; and 24 controls.
 CPP=chronic pelvic pain; TSST=Tier Social Stress Test. *Wingenfeld K, et al. Psychosom Med. 2008;70:65-72.*

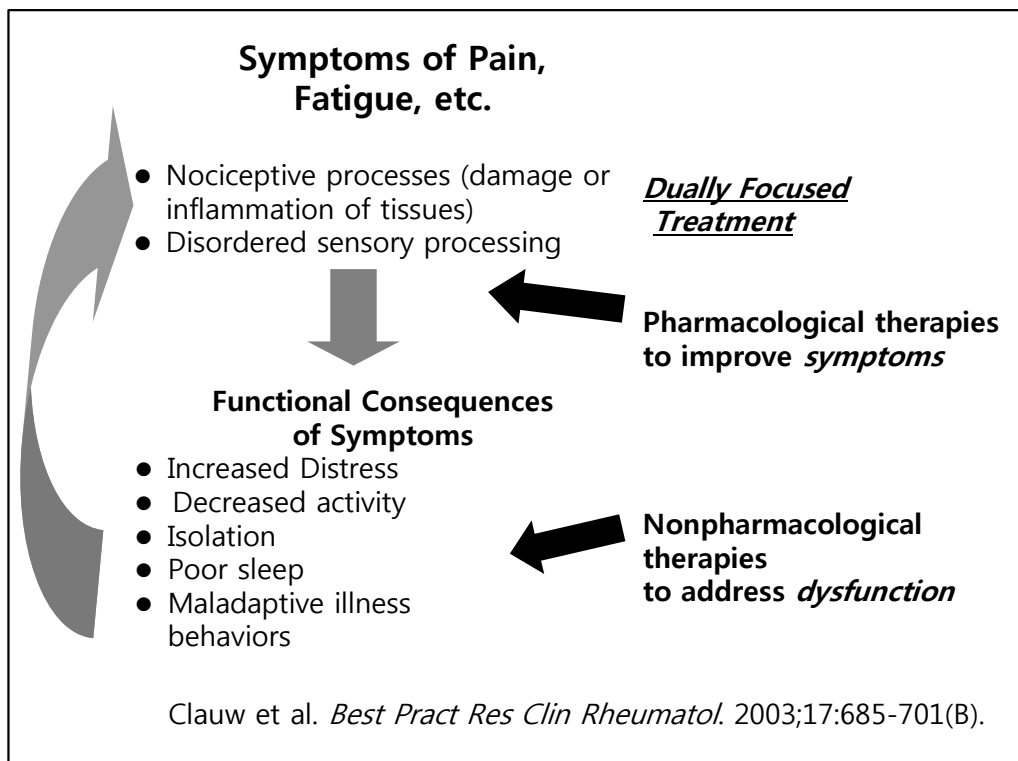
FM May Be Associated With Elevation in Inflammatory Cytokines



IL=interleukin.
Bazzichi et al. Clin Experimental Rheum. 2008;25:225-230.

Treatment of Fibromyalgia

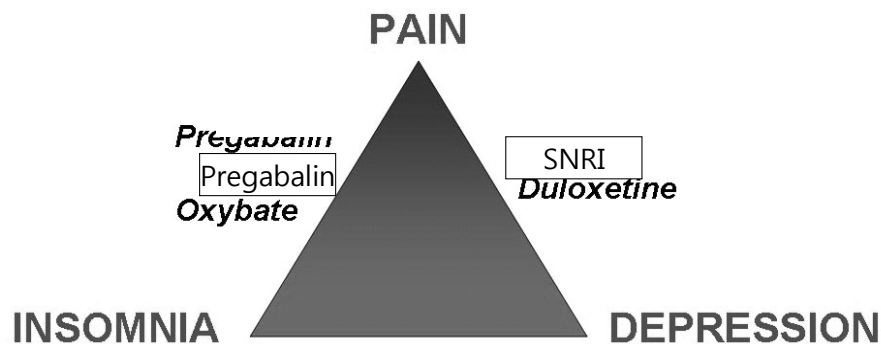
- Education
- Pharmacological therapy
- Aerobic exercise
- Cognitive behavioral therapy (CBT)
- SCENAR Tx.



Pharmacological therapy

- The use of narcotics and benzodiazepines should be avoided when treating patients with fibromyalgia; steroids and NSAIDs should only be used to treat underlying inflammatory conditions if present.
- Amitriptyline was significantly better than placebo for patient global assessment, pain, sleep and fatigue in some trials.
- Selective serotonin and norepinephrine reuptake inhibitors (SNRIs) offer an alternative to cyclic medications (e.g., tricyclics) that are associated with safety and tolerability concerns.
- Duloxetine, milnacipran, and pregabalin are the only FDA-approved medications for the management of fibromyalgia. These drugs were superior to placebo for all outcomes except duloxetine for fatigue, milnacipran for sleep disturbances, and pregabalin for depressed mood.

Combination Tx



Parameters & operating modes

- Energy or Amplitude
- Frequency: 15-351 Hz
- Amplitude Modulation (AM)
- Damping
- Intensity
- Gap
- Swing

General principles and rules of treating & working

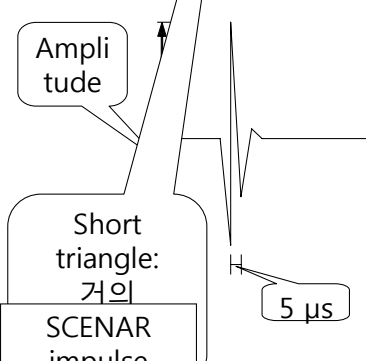
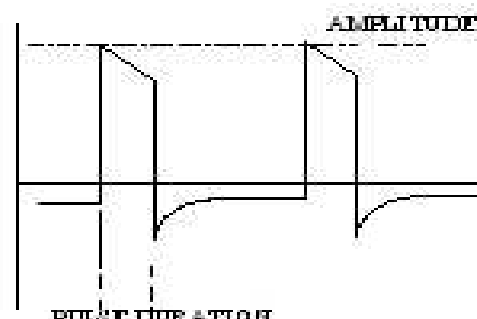
- **Two main principles of SCENAR technology**
 - Small asymmetry
 - FPS (Functional Pathology System)
- **Five rules**
 - Dynamics
 - Asymmetry
 - Small asymmetry
 - opposite sign
 - Cycle

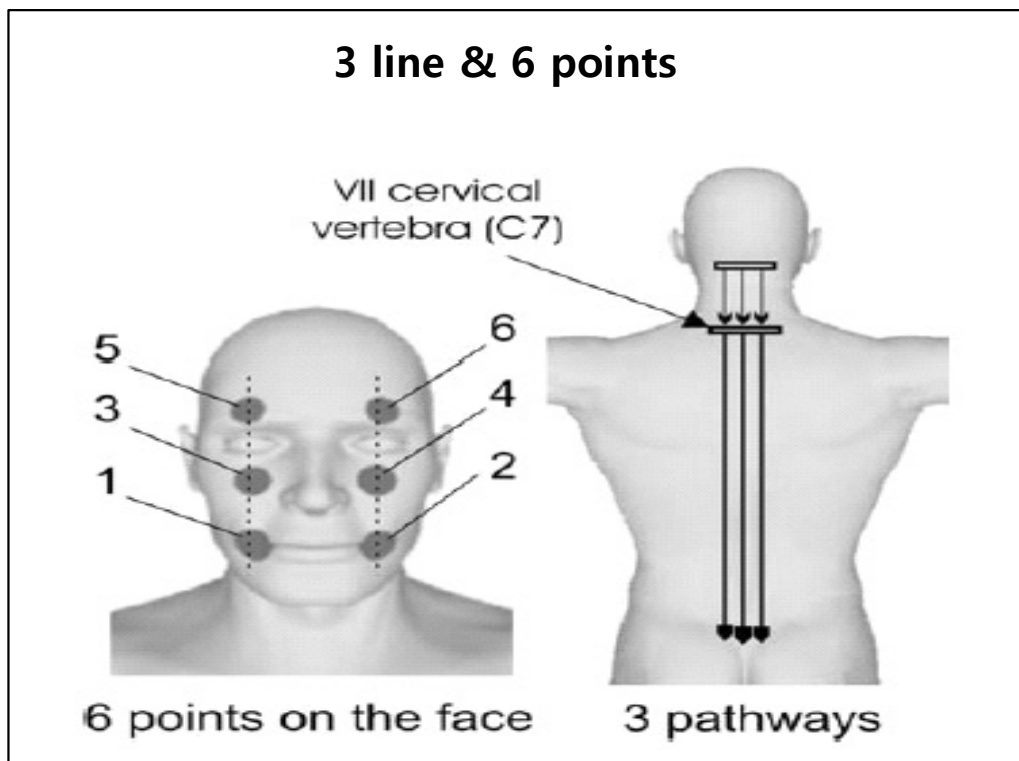
SCENAR Effect

- Analgesic effect
- Anti-inflammation effect
- Antipyretic effect
- Anti-toxic effect
- Anti-swelling effect
- Normalization of vessel tone
- Improvement of microcirculation
- Regeneration effect in bone skin other tissues
- Normalization of general function & metabolism

Mechanisms of SCENAR effect

- SCENAR excites great amount of nerve fibers where transmission of excitement is realized mostly by regulative neuro-peptides- RP
 - internal pharmacy
 - self-regulation
 - Local, segmental and general reactions

SCENAR	TENS
<p>Impulse</p> <p>Bipolar, spike shape high amplitude biofeedback physiologically similar to neuroimpulses</p>  <p>Amplitude</p> <p>Short triangle: 거의 SCENAR impulse</p> <p>5 μs</p>	<p>Impulse</p> <p>Asymmetrical biphasic modified square wave</p>  <p>AMPLITUDE</p> <p>PULSE DURATION</p>



Patients and Methods

- 21 patients (M:F = 2:19)
From Sep. 2007 to Feb. 2008
- Mean Number of Treatment: 8.5 (4-15)
- Mean Treatment time: 42 mins
- Treatment protocol:
 - General zone (3 lines & 6 points) – Diag 1
 - Local zone (active complaint zones) – Diag 0
 - Scalp stimulation
 - Butterfly

Assessment criteria

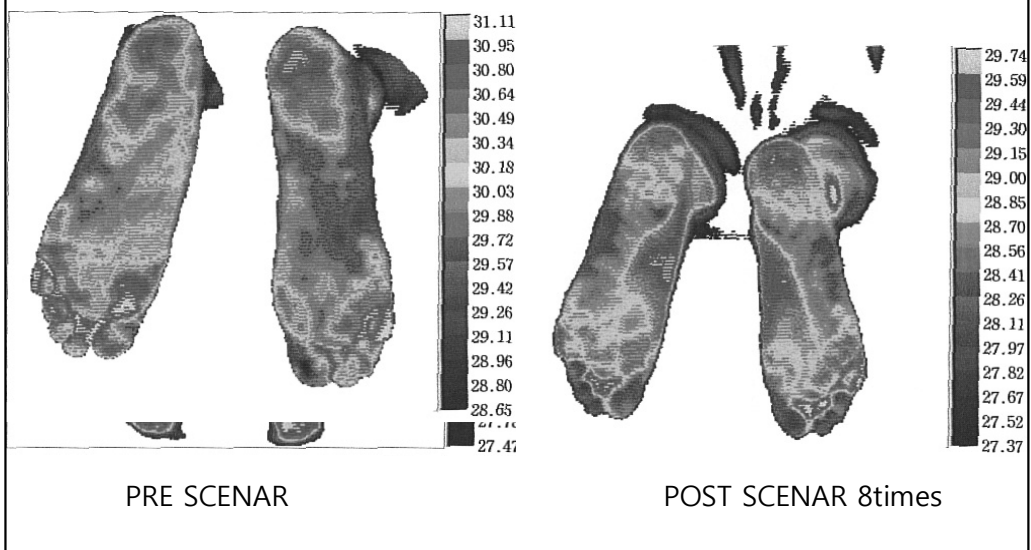
Excellent	$VAS_{\text{post-Tx}}/VAS_{\text{pre-Tx}} < 0.2$
Good	$VAS_{\text{post-Tx}}/VAS_{\text{pre-Tx}} < 0.5$
Fair	$VAS_{\text{post-Tx}}/VAS_{\text{pre-Tx}} < 0.7$
Poor	$VAS_{\text{post-Tx}}/VAS_{\text{pre-Tx}} \geq 0.7$

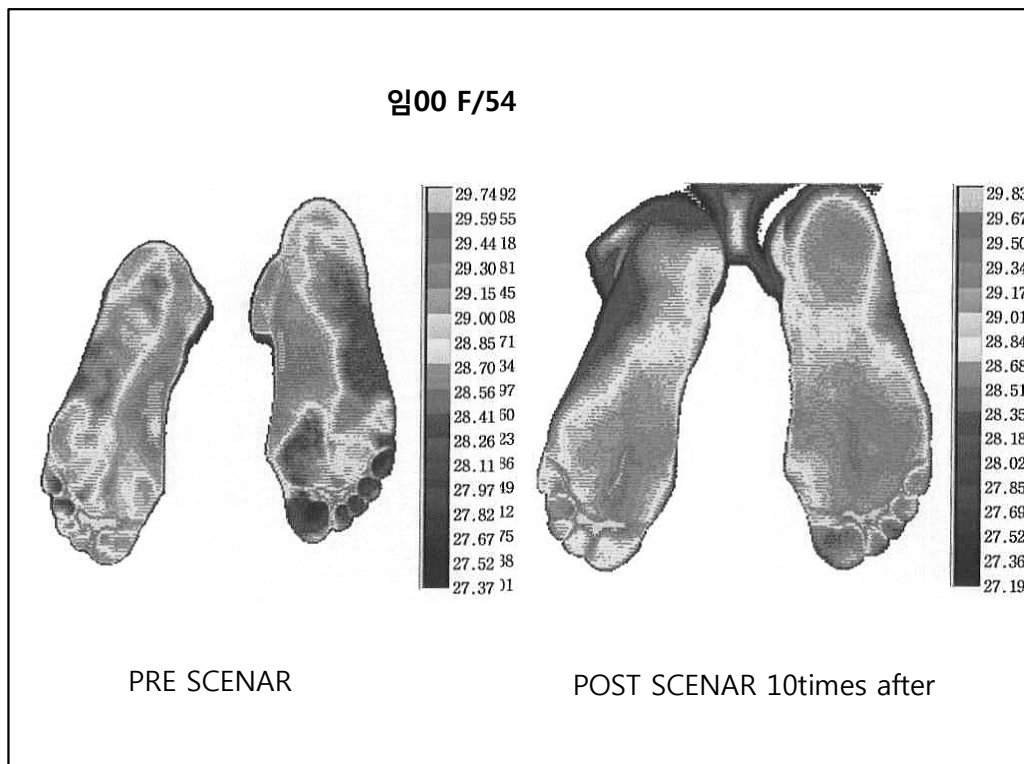
Results

- Excellent 10 (48%)
- Good 4 (19%)
- Fair 5 (24%)
- Poor 2 (9%)

DITI 촬영 비교

김00 F/50





Summary

- 섬유근통 증후군은 유병률이 2.2%인 흔한 질환
- 현재의 손상이나 염증에 근거해 설명할 수 없는 만성적인 다발성 통증을 호소할 때, 섬유근통 증후군을 먼저 생각
- 압통점 검사를 제외한 2010년 '진단기준'이 나옴
- 섬유근통 환자들은 다른 통증 상황에 비해 전반적인 건강 상태 및 삶의 질 저하가 심각
- 섬유근통 증후군 및 관련 질환들은 심각한 사회경제적인 손실을 야기하나, 빠르고 정확한 진단은 의료비용 감소 및 환자의 만족도 개선
- 중추성 민감화가 주된 기전, 대뇌의 구조적 변화
- 부족한 세로토닌과 노르에피네프린, 상승된 substance P 및 글루타메이트
- 처음엔 증상을 호전시킬 수 있는 '맞는' 약물의 선택이 필수며, 이후 비약물적인 치료들이 병행되어야

memo