

Pain Definition (IASP)

- **Unpleasant sensory and emotional experience associated with actual or potential tissue damage, or describe in terms of such damage.**

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are needed to see this picture.

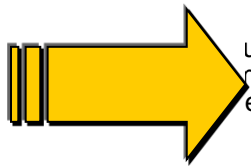
International for the Study of Pain: Pain Definition.
Bonica JJ. The need of a taxonomy. Pain 1979;6(3):247-8.

Pain Management

Bio Psycho Social Culture

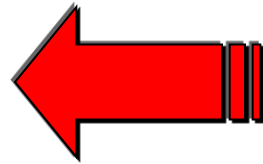


Pradit Prateepavanich, Assoc Prof
Dept PM&R, Siriraj Hospital
Past-President Thai Association for the Study of Pain



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are needed to see this picture.

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Classification

♥ By location (Topography)

- Pathophysiology
- By duration
acute,
subacute,
chronic
- By behavior
Acute Pain,
Chronic Pain,
Cancer Pain



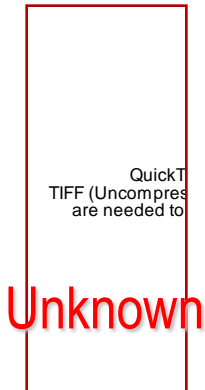
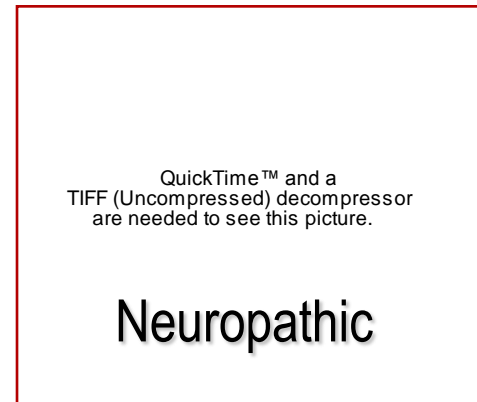
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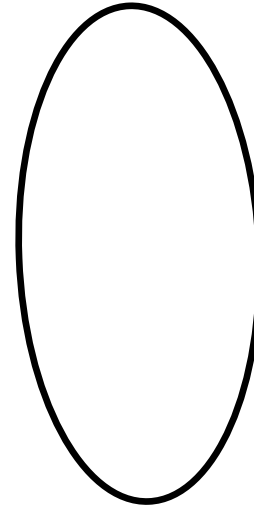
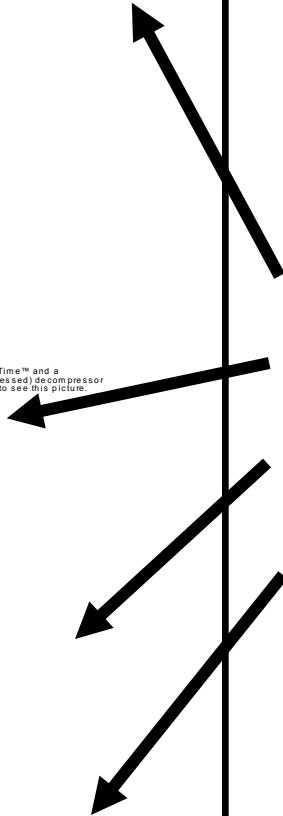
Inflammation



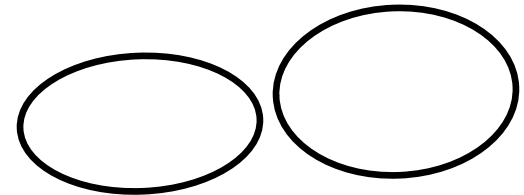
Basic Science

**Perception
Transmission
Transduction
Depolarization**

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Acute Pain
[Symptom]

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are needed to see this picture.

Physiological Pain

Warning Sign

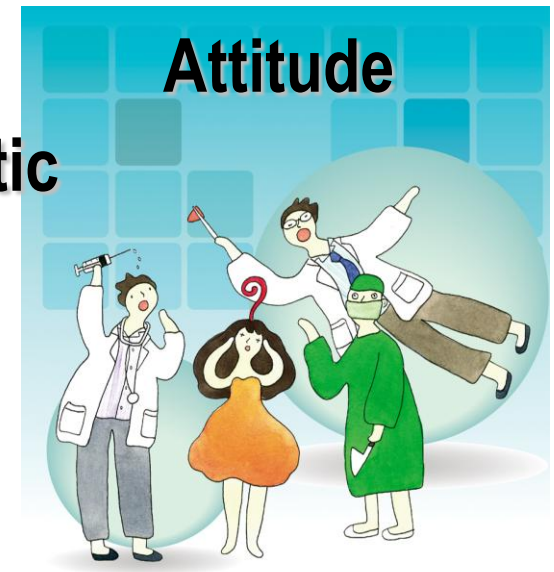
Regress to Mean [Acute Injury]

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are needed to see this picture.



Symptomatic or Asymptomatic
Sudden onset

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are needed to see this picture.



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♥ By duration

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chronic

- By behavior
Acute Pain,
Chronic Pain,
Cancer Pain

After 2 weeks - 3 months



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are needed to see this picture.

Classification

- By location (Topography)
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subacute,
chronic

- By behavior

Acute Pain,
Chronic Pain,
Cancer Pain

Beyond Healing Time
[> 3 months]



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TIFF (Uncompressed) decompressor
are needed to see this picture.

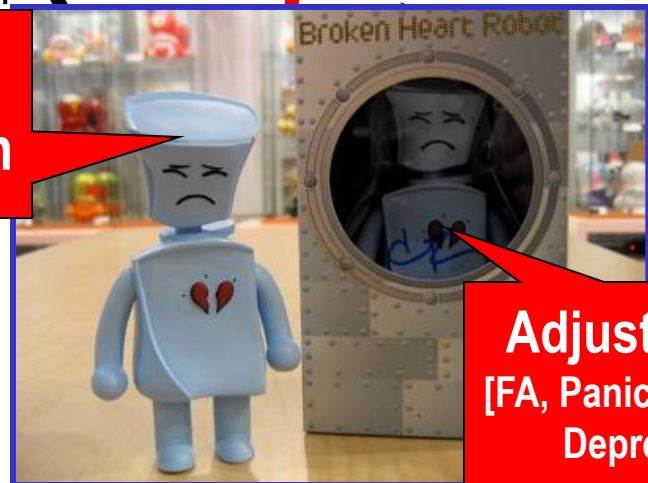
Chronic Pain



Acute Onset
Insidious/Gradual Onset
[Acute Exacerbation]
[Repetitive Strain]

TIFF (Uncompressed) decompressor
are needed to see this picture.

**Central
Sensitization**

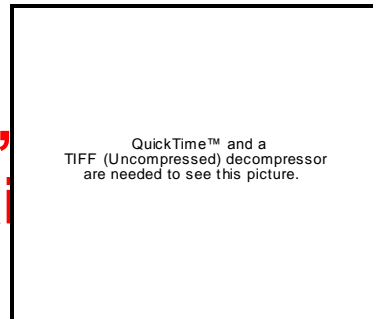
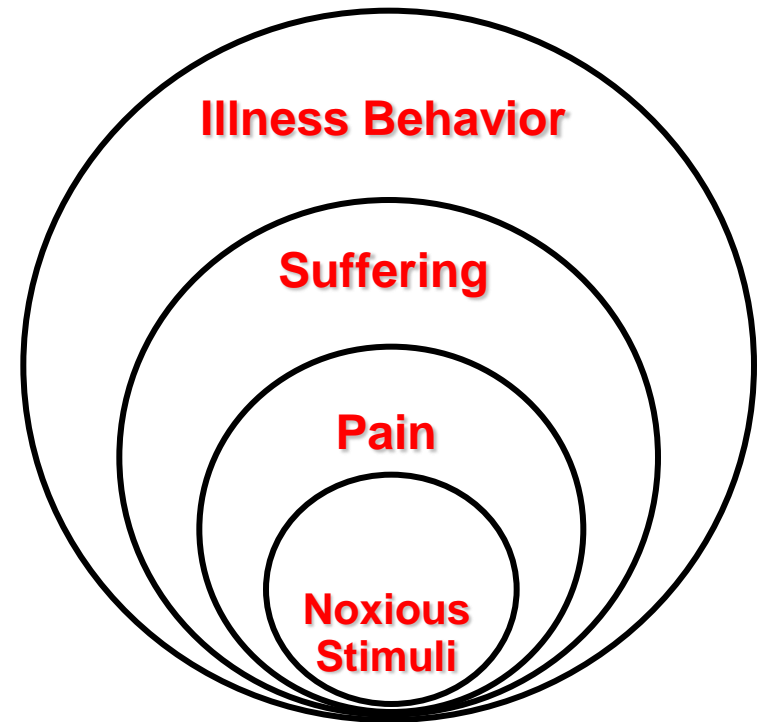


Adjustment
[FA, Panic, OCPD,
Depress]

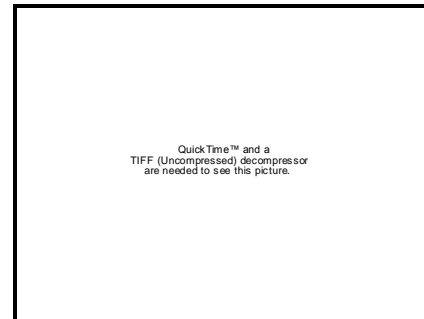
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Classification

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Acute



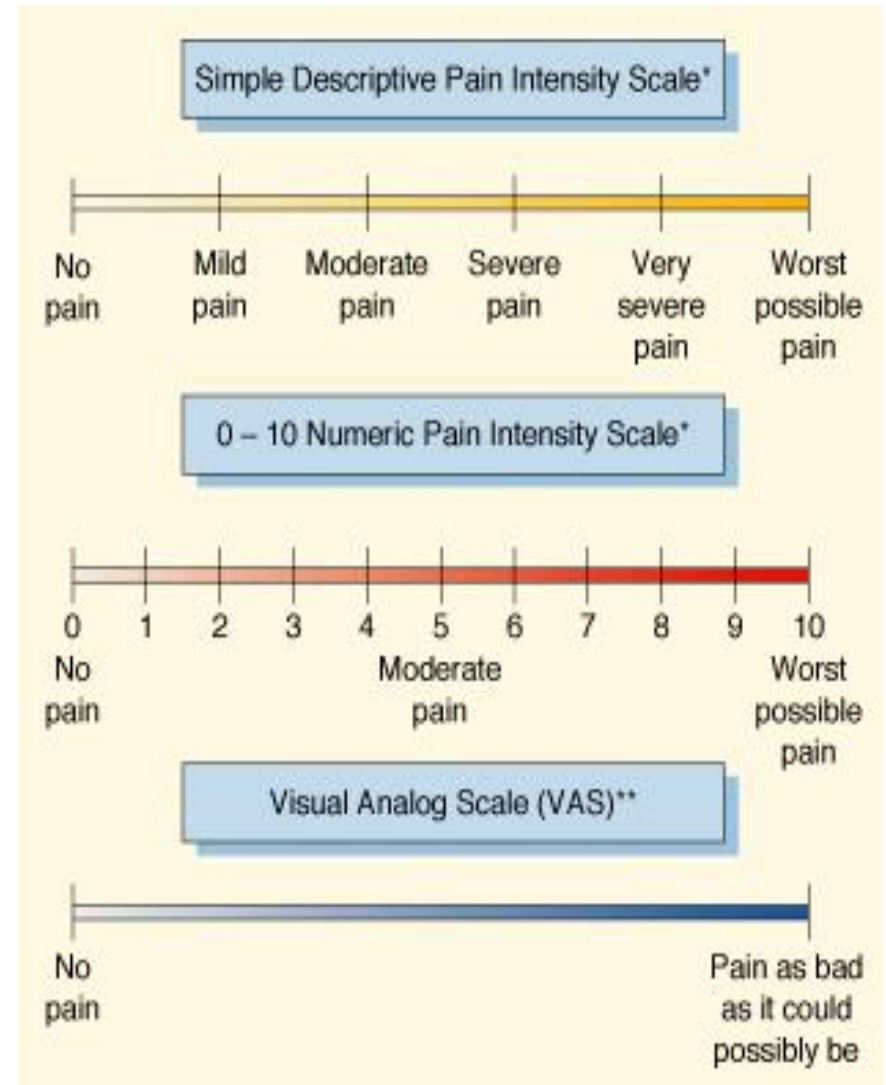
Chronic

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Cancer

PAIN MEASUREMENT

■ Unidimensional measures of pain:



MULTIDIMENSIONAL MEASURES OF PAIN

- Provide further information about the characteristics of pain and its impact on the individual.
- Brief pain inventory which assesses pain intensity and associated disability (Daut et al 1983)
- McGill pain questionnaire which assesses the sensory, affective and evaluative dimensions of pain

PAIN TREATMENT CONTINUUM

Diagnosis

Oral Medications

PT, Exercise, Rehabilitation

Behavioral Medicine

Corrective Surgery

Therapeutic Nerve Blocks

Oral Opiates

Implantable Pain Management Devices

Neurostimulation

Intrathecal Pumps

Neuroablation

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Although few people die of Pain

[eg.Acute Pain]

Many die in Pain

[eg.Cancer Pain]



An even more live with Pain

[eg.Chronic Non-cancer Pain]

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Prevalence of Pain

☐ **Chronic non-cancer pain**

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TIFF (Uncompressed) decompressor
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20%

☐ **Cancer pain**
[Terminal



30-45%
70-90%]

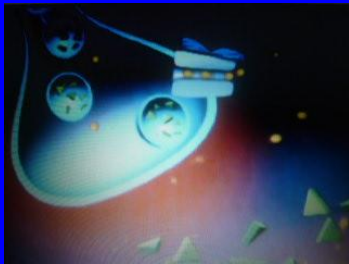
☐ **Neuropathic Pain**



7-8%

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TIFF (Uncompressed) decompressor
are needed to see this picture.

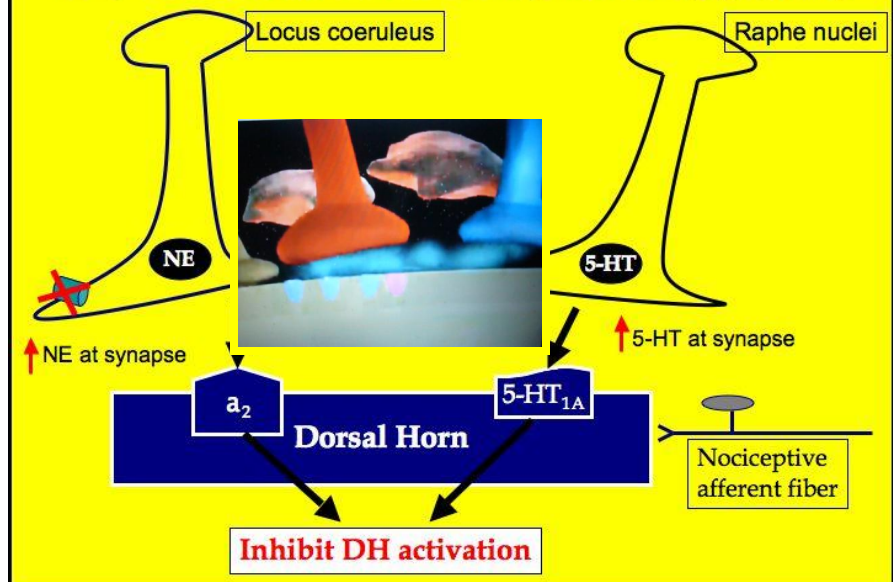
Drug modulates hyperexcited neurons



Straube S, Derry S, Moore RA, McQuay H. Pregabalin in fibromyalgia: meta-analysis of efficacy and safety from company clinical trial reports. *Rheumatol* 2010;49(4):706-15.

Ca⁺⁺ & Na⁺ Channal Modulating Drugs

Drugs that enhance descending inhibitory pathway



TCA, SNRI, Tramadol

Acute OA

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TIFF (Uncompressed) decompressor
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Chronic OA

Pharmacology

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are needed to see this picture.





Mechanic

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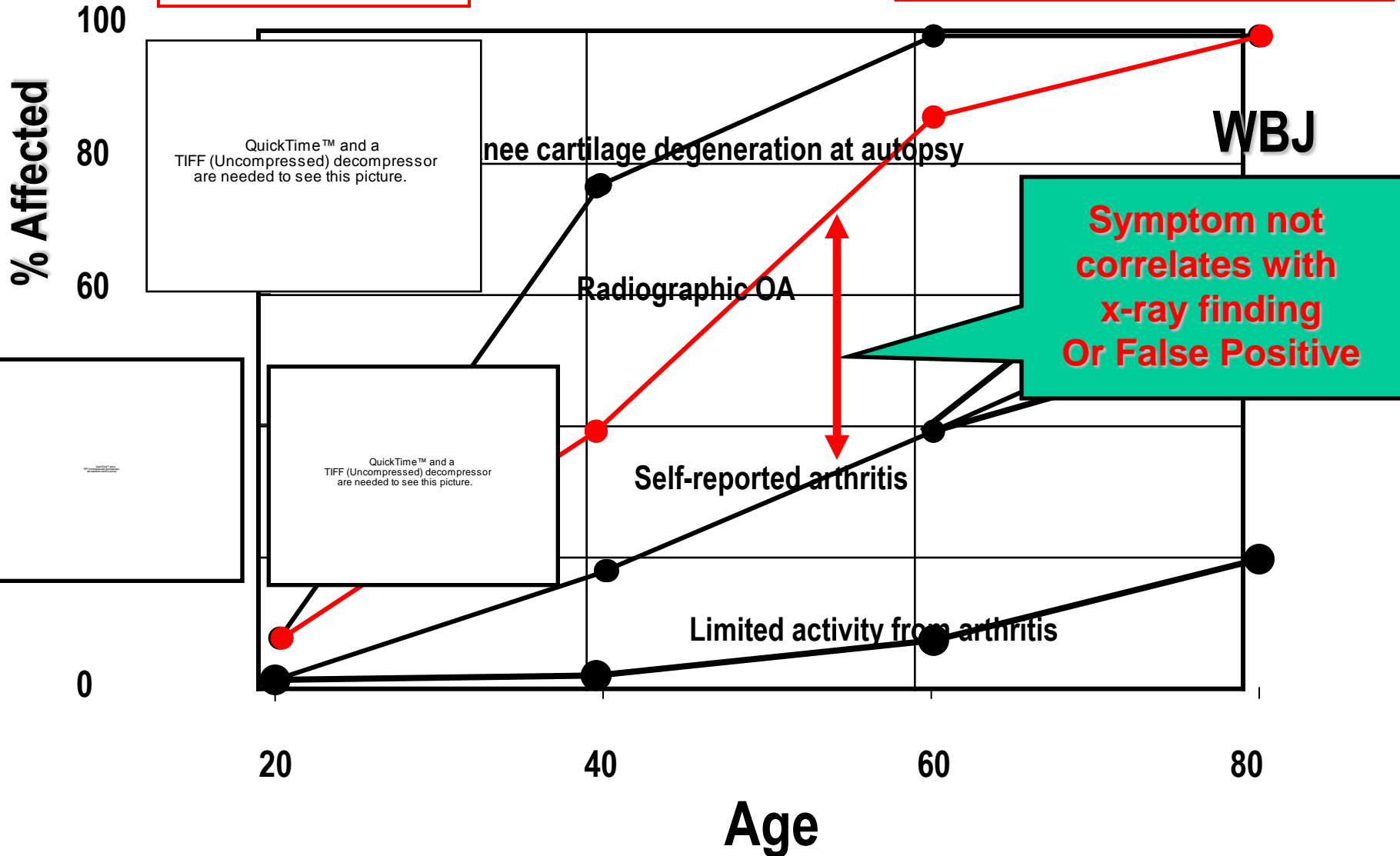
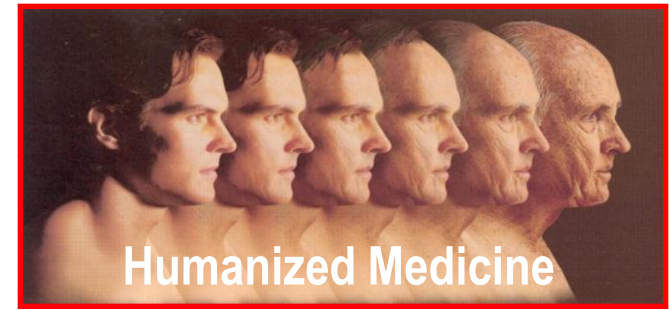
QuickTime™ and a
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are needed to see this picture.

EULAR 2005 Guideline for OA

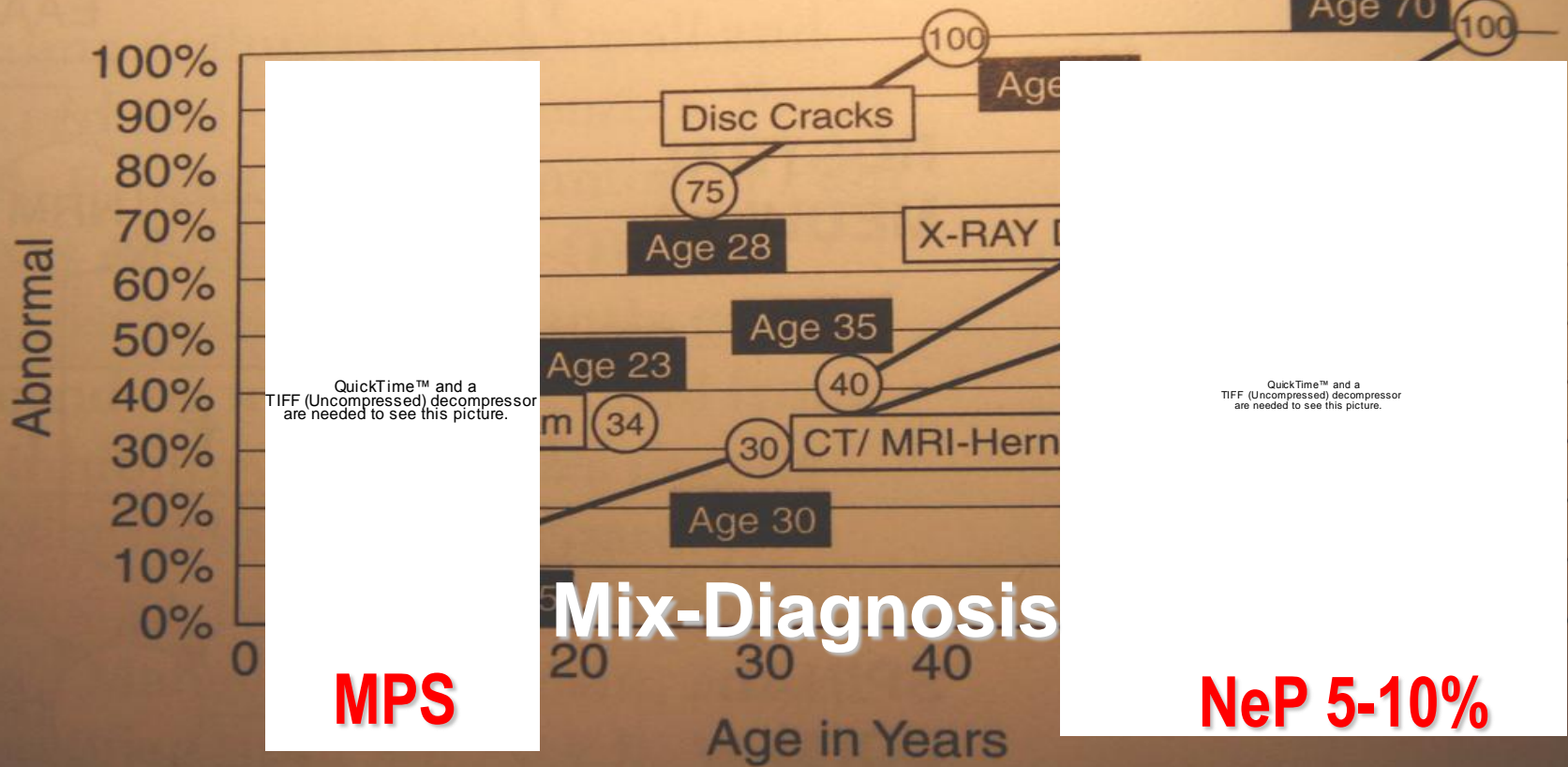
<i>Non-Pharmacology</i>		Level of evidence	Strength of Recommendation
Education		1A	A
Exercise		1B	A
Weight loss		1B	B
<i>Pharmacological</i>			
Acetaminophen		1B	A
NSAIDs - Conventional		1A	A
- Coxibs		1B	A
- Topical		1A	A
Opioid		1B	B
Glucosamine		1A	A
Diacerein		1B	B
IA hyaluronic		1B	B
IA steroid		1B	A

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Age & OA



Disc Findings in Normal Subjects



Mis-Diagnosis

False-positive rates for HNP with various imaging modalities.

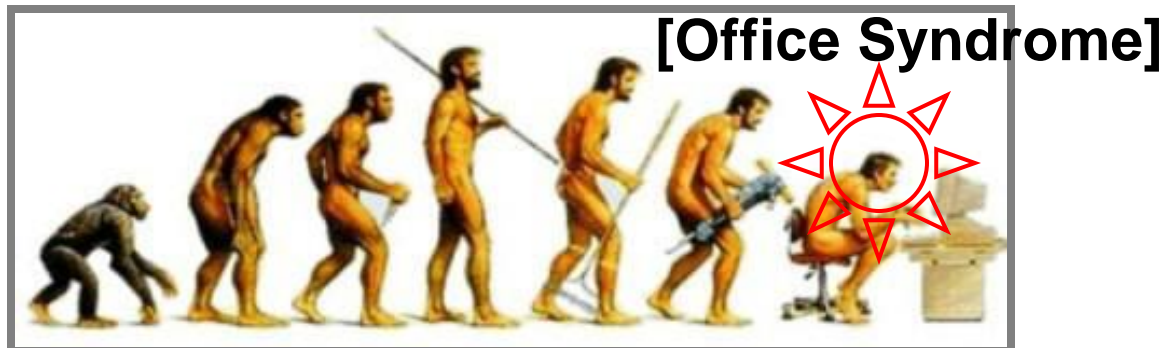
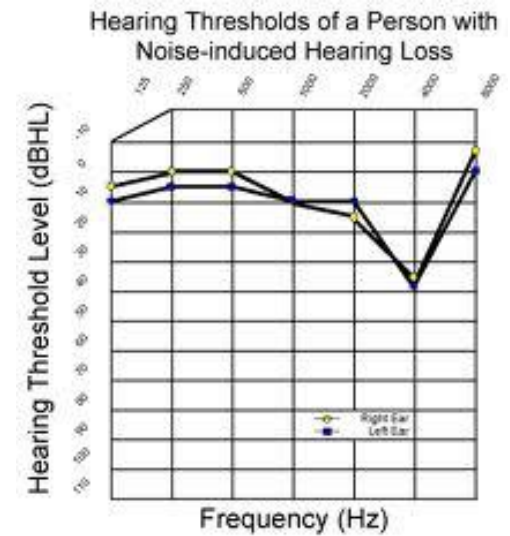
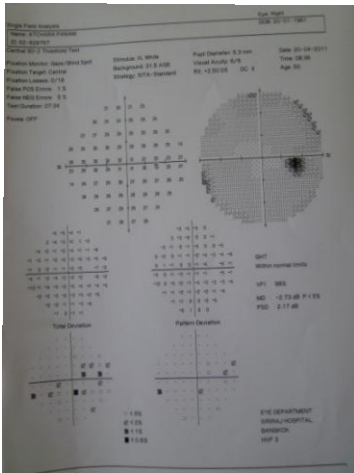
Bigos S, Muller G. Primary care approach to acute and chronic back problems. Definition and care. In: Loeser JD, ed. Bonica's Management of Pain, 3rd ed. 2001

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[More than one symptoms is the most common of cervical MPS]

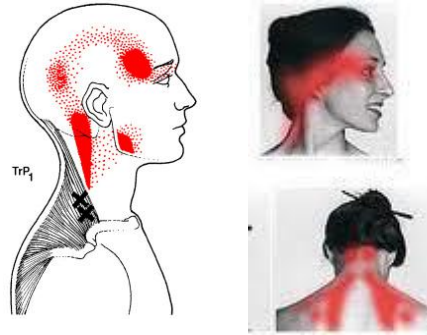
☐ Myofascial Pain is a Syndrome



Each TrP has specific referred pain pattern

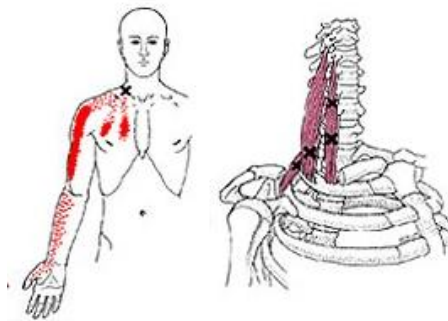
- ☐ Referred to Head

[upper trapezius, posterior cervical]



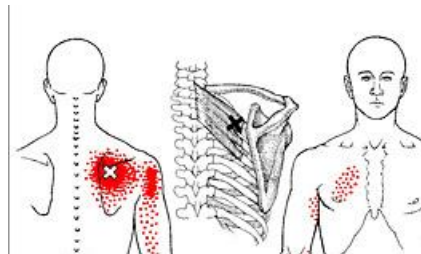
- ☐ Referred from neck to Arm

[Scalene : Clinical TOS]



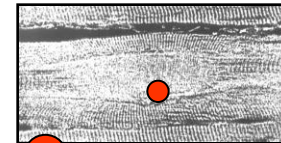
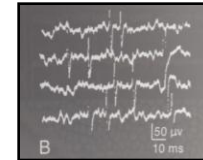
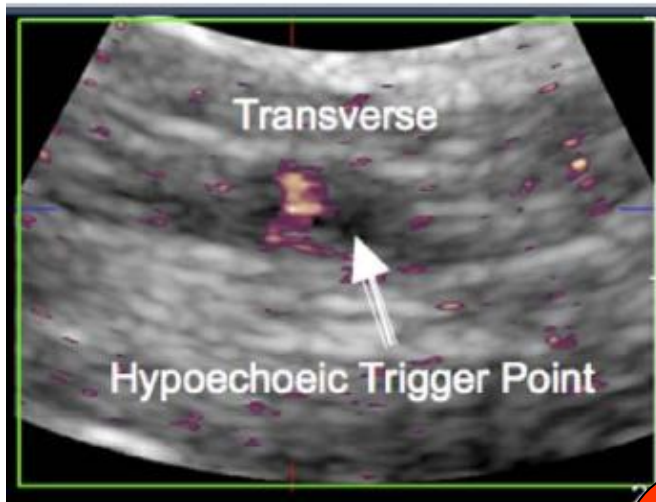
- ☐ Referred deep inside Scapular ± chest

[serratus superior posterior]



Sikdar S, Shah JP, Gebread T, et al. Novel applications of ultrasound technology to visualize and characterize myofascial trigger points and surrounding soft tissue. Arch Phys Med Rehabil Vol 90, November 2009;1829-38.

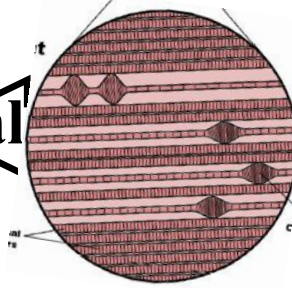
Pathophysiology Trigger Point



**Neurovasoactive
Substances
such as bradykinin,
Substance P,
Serotonin, and
histamine**

Shah JP, Gilliams EA. Uncovering the biochemical milieu of myofascial trigger points using in vivo microdialysis: An application of muscle pain concepts to myofascial pain syndrome. J Bodywork and Movement Therapy (2008) 12, 371-84.

Chemical



Mechanic



 Stretching



 Massage



 Dry Needling

And Acupuncture

 Trigger Point Injection



Time™ and a
ssed) decompressor
see this picture.

Local anesthetic

CWP with associated symptoms

Characterized by increase pain sensitivity : the extreme end of a spectrum of abnormal pain sensation/processing [Wolfe F, et al. *Arthritis Rheum* 1999;36:19-26.]

[ICD M 79.0 : Non-specific rheumatic condition (Fibromyalgia)]

2% population
F/M = 8-10/1
30-50 Years



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- ✓ Psychologic symptoms
- ✓ Rheumatic symptoms
- ✓ Orthopedic symptoms
- ✓ Neurologic symptoms
- ✓ Gynecologic symptoms
- ✓ Urologic symptoms
- ✓ Rehabilitation

Pathophysiology

**Central Sensitization
(Imbalanced of Nociception)**

↑ Pro-nociceptor

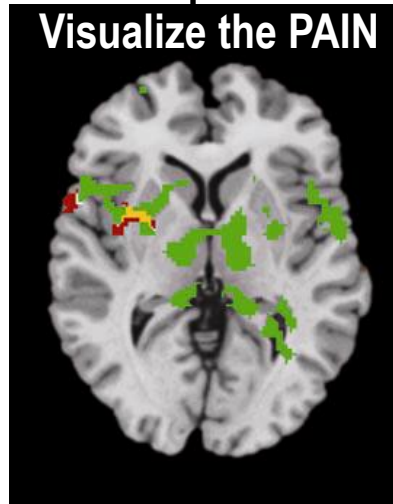
**Glutamate,
substance P,
IL-1 β , IL-6, 8,
TNF- α**



Glutamate, Substance P

Staud R. Biology and therapy of fibromyalgia

Visualize the PAIN



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

Hybrid



↓ Anti-nociceptor

**Serotonin,
Noradrenaline,
Dopamine
IL-4, 10**



Serotonin, Noradrenaline

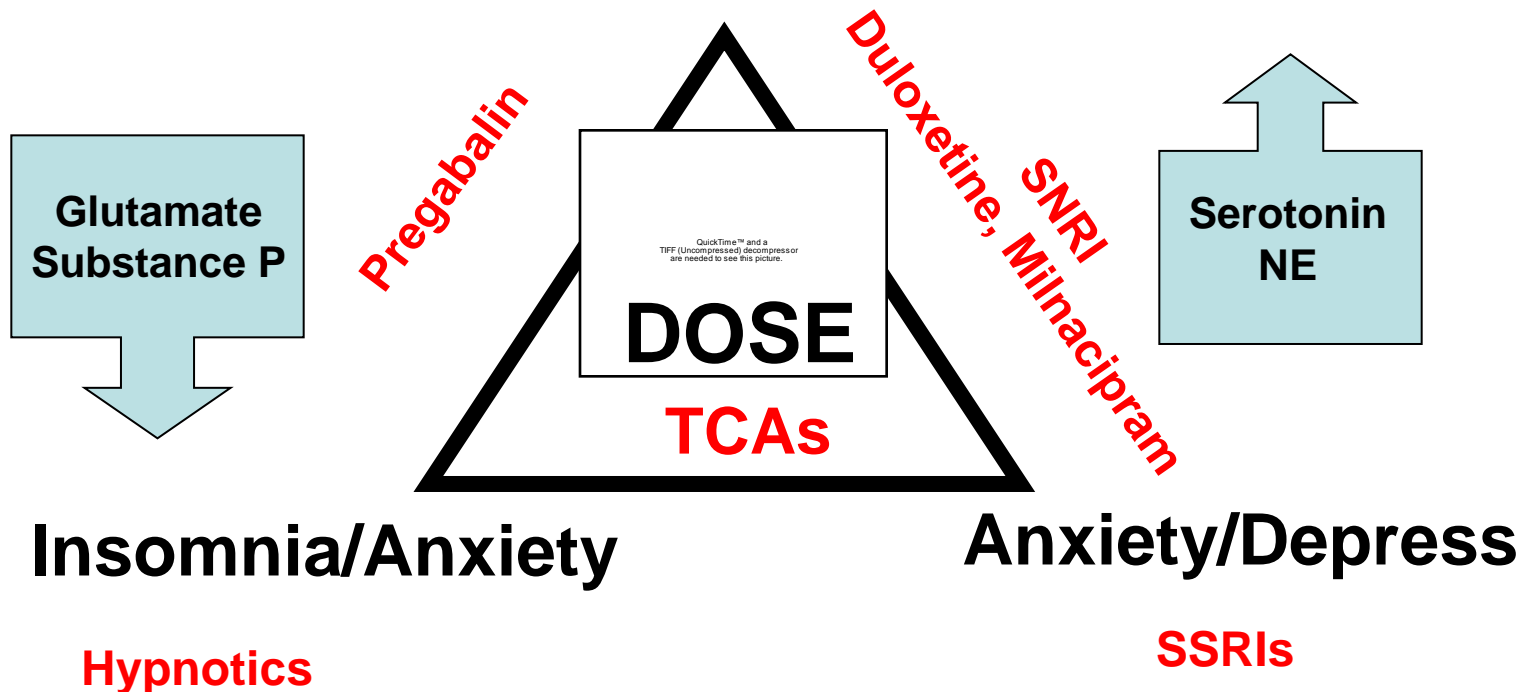
syndrome. Arthritis Res Ther 2006;8:208-14.

Assess Key Symptom(s)

Clinical-Based

Acetaminophen
Weak-Opioid
(Reacutization)

Pain or others



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Coping Strategy

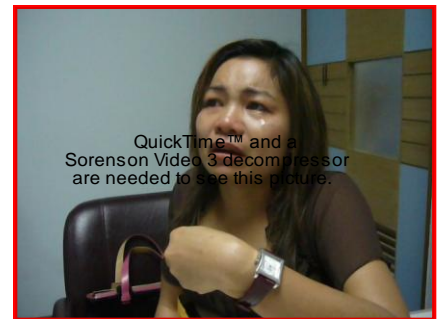


How many common coping strategies [psychosocial subgroups] in Fibromyalgia patient?

*Bennett R, Nelson D. Cognitive behavioral therapy for fibromyalgia.
In: Nature Clinical Practice Rheumatology. Aug 2006 Vol 2 No 8, p 416-24.*

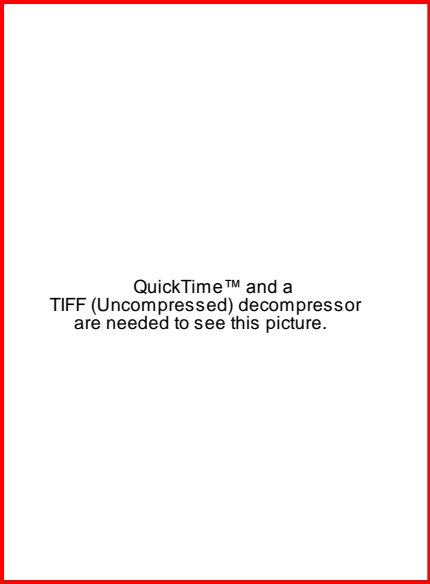
What is the common cognitive error from the therapist side in each subgroup?

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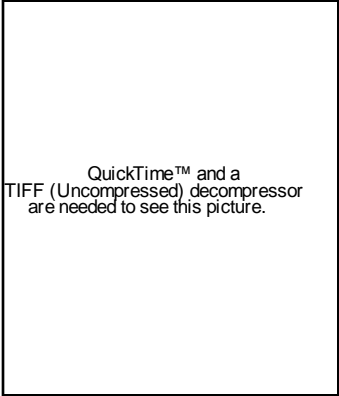


Bennett R, Nelson D. Cognitive behavioral therapy for fibromyalgia.
In: Nature Clinical Practice Rheumatology. Aug 2006 Vol 2 No 8, p 416-24.


Stress Reduction



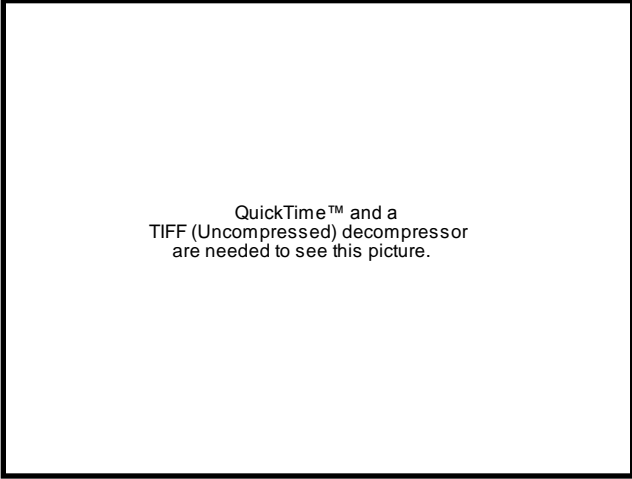
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Trigger or Co-morbid

22% in SLE¹

22.2% in Migraine²

32.3% Anxiety³

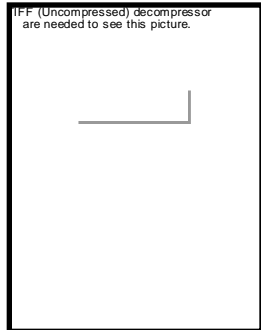
14.6% in MDD³

23.3% OCPD³

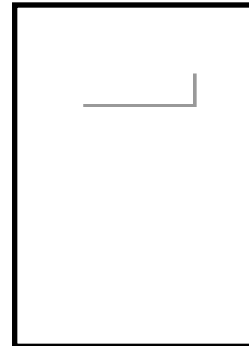
14% in Arthritis^{4 4}



Rheumatologist



Neurologist



Psychiatrist



Rehabilitation

1. Journal of Clinical Rheumatology 1995;1:158-64. 2. Cephalalgia 2006; 26(4): 451-56.
3. General Hospital Psychiatry 2010;32:105-07. 4 Wolfe F, et al. *Arthritis Care Res (Hoboken)* 2010;62:600-610.

Cancer Pain

[Mix Nociceptors]

Cancer Pain



Acute Pain



Chronic Pain



CAM

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Tumor itself

Bone Metastasis
Obstruction
Invade nerve

Treatments

Post-op Pain
CMT
RT

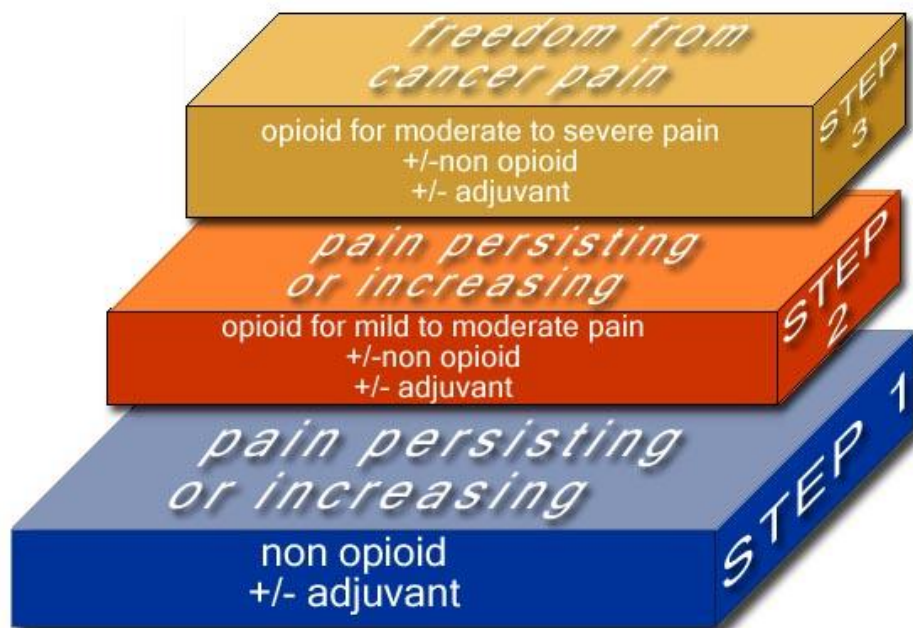
Mental Metastasis

Psychological Co-morbid

Coper
Stress [Fear]
Depress

QuickTime™ and a
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WHO 3 Steps Ladder [Cancer Pain Only]



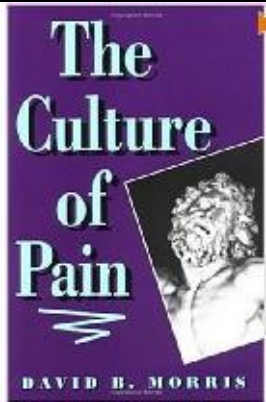
Sedation Score

Palliative Care Facts of Life



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Culture of Pain

Color of Management



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John H Turney BMJ 1998;317:142
“Doctors who changed a patient’s life,



Today’s dogma **may be tomorrow’s joke.”**

“Yesterday’s joke may be today’s dogma”

After WW II

1960 : Quackery

1970 : Unproven remedies

1980 : Questionable remedies

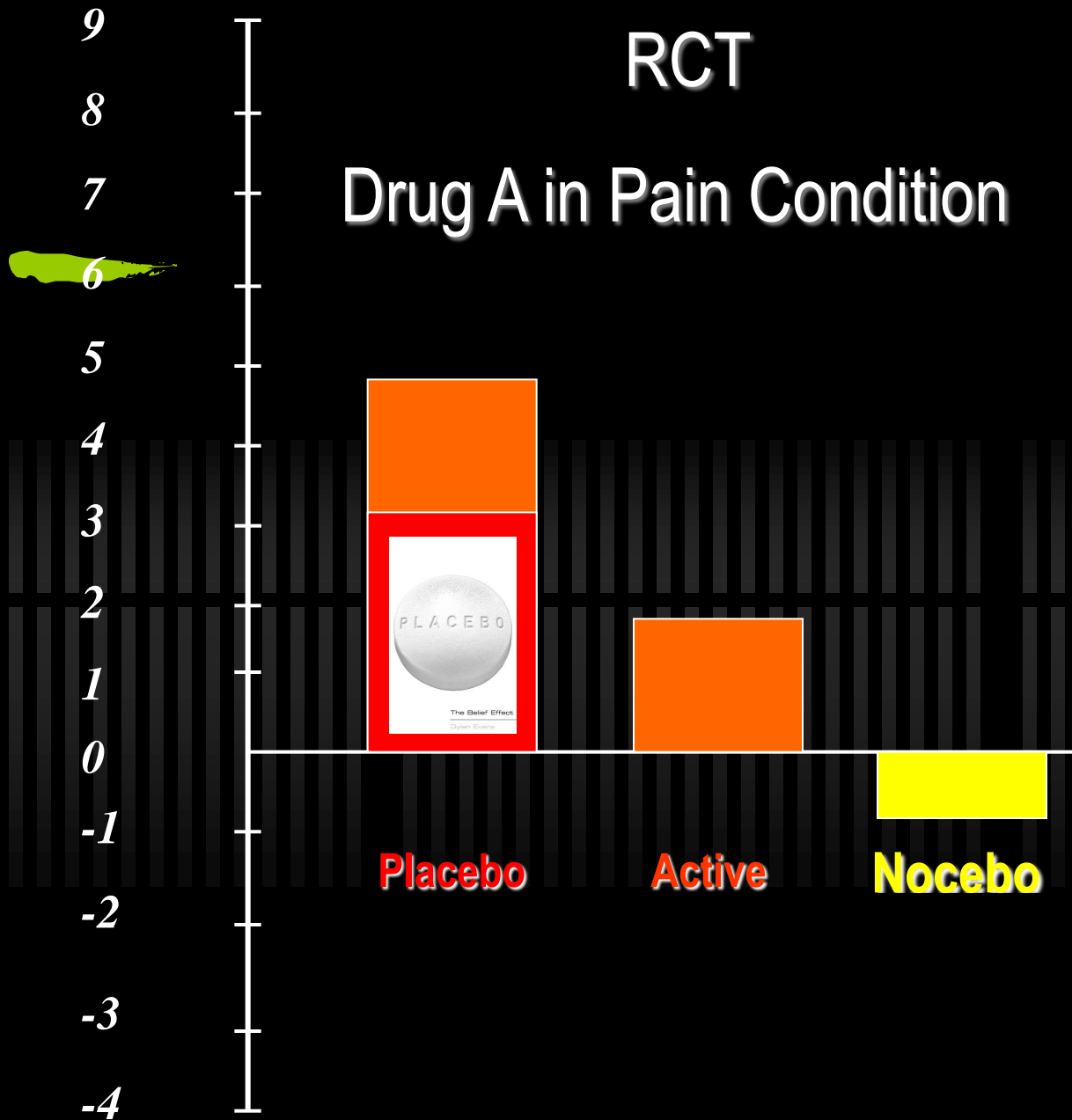
1990 : CAM



2004 : Placebo Analgesia & Nocebo Hyperalgesia

RCT

Drug A in Pain Condition



Culture [Attitude] & Dynamic

Vietnamese

American

Acute Pain

Consumption Morphine

0.9 mg.

30.2 mg

8%

80%

Inadequate pain control reported

Lasch KE. Culture and Pain. Pain Clinical Updates. 2002;10(5):1-9.

Carragee EJ, Kim D, van der Vlugt T, et al. Pain control and cultural norms and expectations after closed femoral shaft fractures. Am J Orthop 1999;28(2):97-102.

2011

Is there any cross culture effect on coping strategy?

QuickTime
TIFF (Uncompressed
are needed to see



Coper



Distressed



Dysfunction

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e this picture.

Epidemiology : Prevalence? Subgroup Proportion?

Vietnamese

Lasch KE. Culture and Pain. Pain Clinical Updates. 2002;10(5):1-9.

Carragee EJ, Kim D, van der Vlugt T, et al. Pain control and cultural norms and expectations after closed femoral shaft fractures. Am J Orthop 1999;28(2):97-102.

Cancer Pain

[Mix Nociceptors]

Cancer Pain



Acute Pain



Chronic Pain



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Tumor itself

Treatments

Psychological Co-morbid

Bone Metastasis
Obstruction
Invade nerve

Post-op Pain
CMT
RT

Coper
Stress [Fear]
Depress

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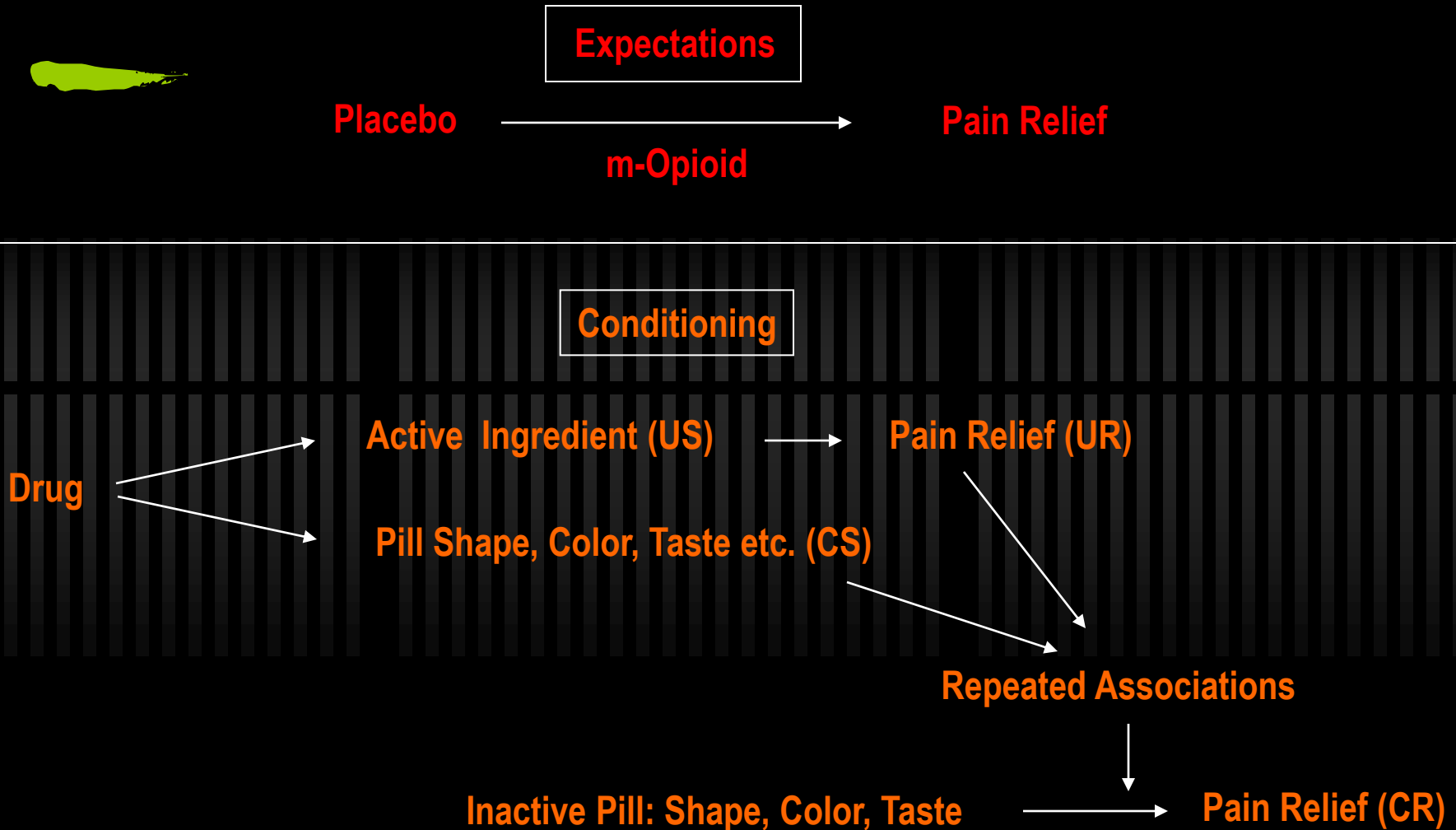
Believe

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TIFF (Uncompressed) decompressor
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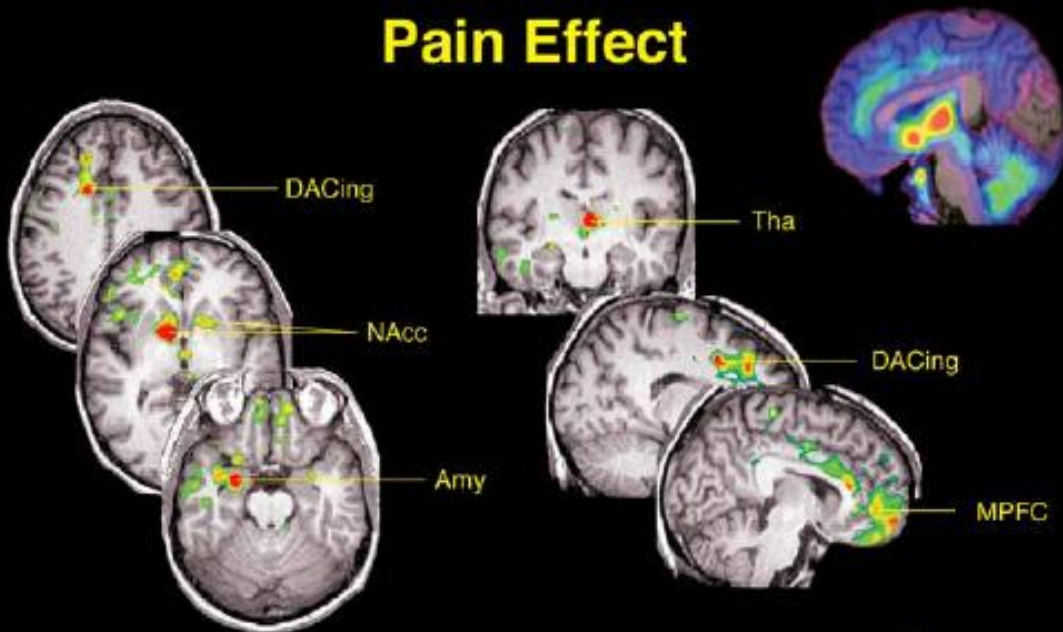
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Placebo Mechanisms



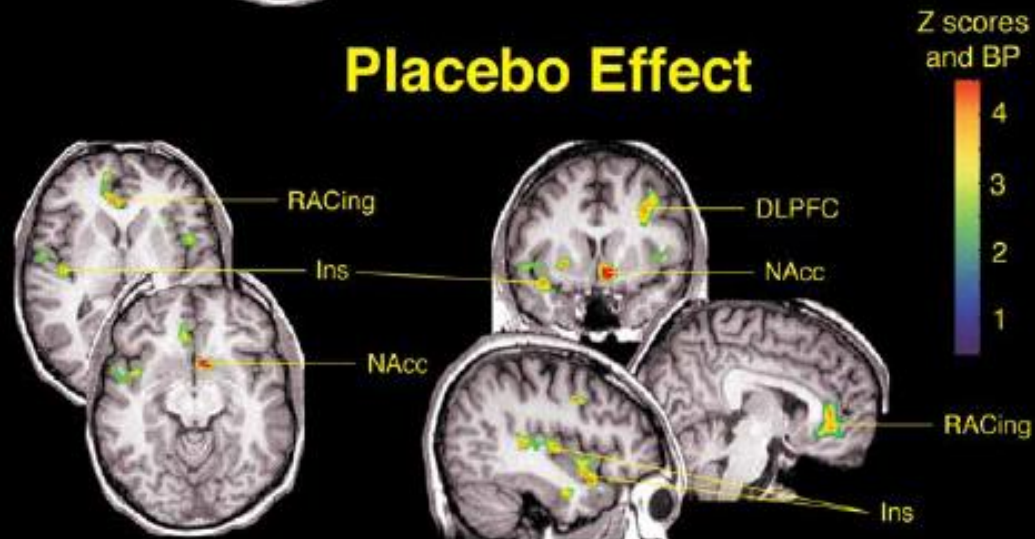
Pain Effect



Physiological Basis for the “Placebo Effect” in Pain

Zubieta et al. *J Neurosci* 2005

Placebo Effect

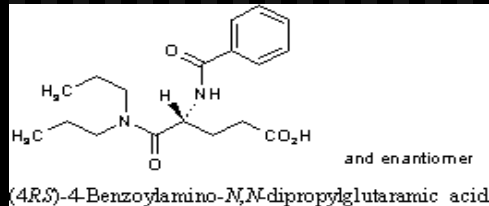


Placebo Regions

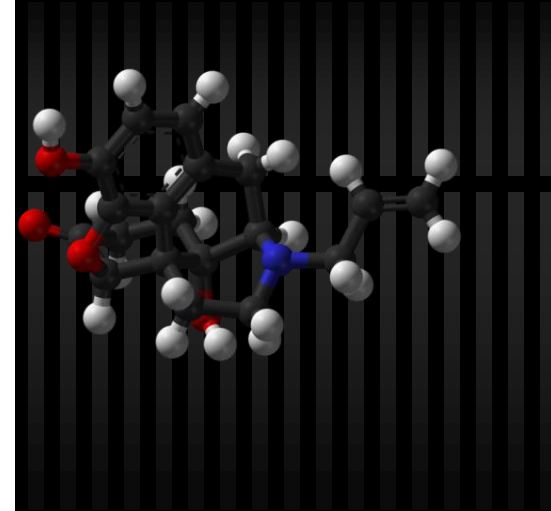
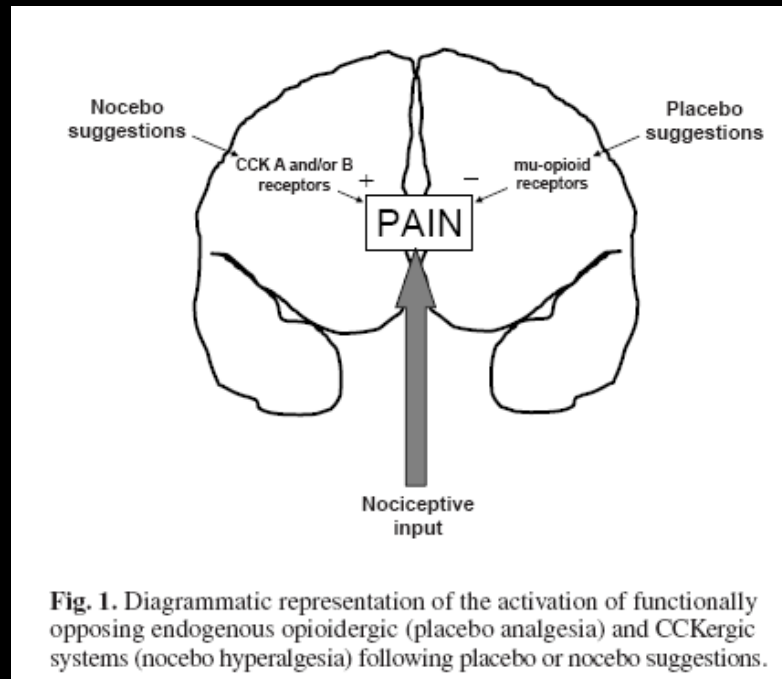
**Rostral Anterior Cingulate (RACing),
Dorsolateral Prefrontal Cortex (DLPFC),
Nucleus Accumbens (NAcc),
Insula (Ins)**

PET and MRI brain scans were combined to make these images, illustrating activity in the brain's mu opioid system. On top, study participants were experiencing pain. On the bottom, they thought they were receiving an injection of painkiller medicine that was actually a placebo. Image Courtesy of University of Michigan.

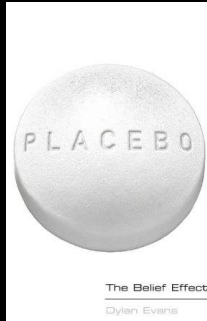
What causes the placebo/nocebo effect?



Proglamide
CCK inhibitors



Naloxone



Symbolic



Expectation (Belief)



Conditioning

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

The power of Belief is Unbelievable

Culture [Attitude] & Dynamic



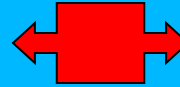
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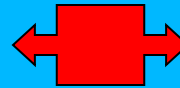


Bio [Organic]



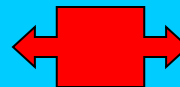
**Knowledge
[Acute Pain]**

Psychosocial



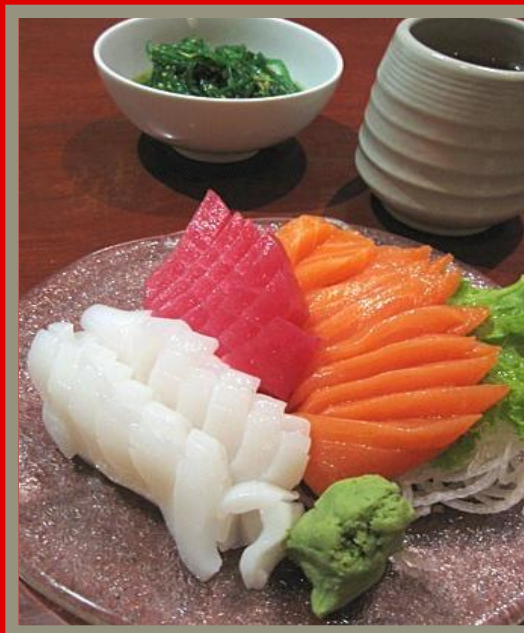
**Skill
[Chronic Pain]**

Culture



**Attitude
[Spiritual Pain]**

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.



The Culture of Pain

DAVID B. MORRIS



MODERATE

UNIVERSAL PAIN ASSESSMENT TOOL

This pain assessment tool is intended to help patient care providers assess pain according to individual patient needs. Explain and use 0-10 Scale for patient self-assessment. Use the faces or behavioral observations to interpret expressed pain when patient cannot communicate his/her pain intensity.

