Pain Definition (IASP)

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

International for the Study of Pain: Pain Definition.
Pain Management

Bio  Psycho  Social  Culture

Knowledge  Skill  Attitude

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

❤️ By location (Topography)
- Pathophysiology
- By duration
  - acute,
  - subacute,
  - chronic
- By behavior
  - Acute Pain,
  - Chronic Pain,
  - Cancer Pain
Classification

- By location (Topography)
- Pathophysiology
  - By duration
    - acute, subacute, chronic
  - By behavior
    - Acute Pain, Chronic Pain, Cancer Pain
Basic Science

Perception
Transmission
Transduction
Deporalization
Classification

- By location (Topography)
- Pathophysiology
- By duration
  - acute, subacute, chronic
- By behavior
  - Acute Pain,
  - Chronic Pain,
  - Cancer Pain

Acute Pain [Symptom]

Physiological Pain
Warning Sign
Regress to Mean [Acute Injury]

Symptomatic or Asymptomatic
Sudden onset

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

- By location (Topography)
- Pathophysiology
- By duration: acute, subacute, chronic
- By behavior:
  - Acute Pain,
  - Chronic Pain,
  - Cancer Pain

After 2 weeks - 3 months
Classification

- By location (Topography)
- Pathophysiology

- By duration
  - acute,
  - subacute,
  - chronic

- By behavior
  - Acute Pain,
  - Chronic Pain,
  - Cancer Pain

Beyond Healing Time [ > 3 months]
Chronic Pain

Insidious/gradual onset
[Repetitive Strain]

Acute onset
[Acute Exacerbation]

Central Sensitization

Adjustment
[FA, Panic, OCPD, Depress]
Classification

- By location (Topography)
- By duration
  - acute, subacute, chronic
- Pathophysiology
- By behavior
  - Acute Pain,
  - Chronic Pain,
  - Cancer Pain

Illness Behavior
Suffering
Pain
Noxious Stimuli

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

- Unidimensional measures of pain:
  
  - Simple Descriptive Pain Intensity Scale:
  - 0 – 10 Numeric Pain Intensity Scale:
  - Visual Analog Scale (VAS):
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
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]
Prevalence of Pain

- **Chronic non-cancer pain**
  - 20%

- **Cancer pain**
  - Terminal
  - 30-45%
  - 70-90%

- **Neuropathic Pain**
  - 7-8%
Drug modulates hyperexcited neurons

Drugs that enhance descending inhibitory pathway

Ca^{++} & Na^{+} Channal Modulating Drugs
TCA, SNRI, Tramadol

Acute OA

Pharmacology

Mechanic

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

Chronic OA

QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.
## EULAR 2005 Guideline for OA

### Non-Pharmacology

<table>
<thead>
<tr>
<th>Non-Pharmacology</th>
<th>Level of evidence</th>
<th>Strength of Recommendation</th>
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<tr>
<td>Education</td>
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<td>A</td>
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<tr>
<td>Exercise</td>
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<td>A</td>
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<tr>
<td>Weight loss</td>
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### Pharmacological

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<td>NSAIDs - Conventional</td>
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<td>- Coxibs</td>
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<tr>
<td>- Topical</td>
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<td>Glucosamine</td>
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<td>Diacerein</td>
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<td>B</td>
</tr>
<tr>
<td>IA steroid</td>
<td>1B</td>
<td>A</td>
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</tbody>
</table>
Age & OA

- Radiographic OA
- Self-reported arthritis
- Knee cartilage degeneration at autopsy
- Limited activity from arthritis

% Affected

0  20  40  60  80  100

Age

Symptom not correlates with x-ray finding
Or False Positive
Myofascial Pain is a Syndrome

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

[Office Syndrome]
Each TrP has specific referred pain pattern

- Referred to Head
  [upper trapezius, posterior cervical]

- Referred from neck to Arm
  [Scalence : Clinical TOS]

- Referred deep inside Scapular + chest
  [serratus superior posterior]
Pathophysiology
Trigger Point

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


Chemical Mechanic

- Stretching
- Massage
- Dry Needling
- Trigger Point Injection

Local anesthetic
CWP with associated symptoms
[ICD M 79.0: Non-specific rheumatic condition (Fibromyalgia)]

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

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

Perrot S. Fibromyalgia syndrome: a relevant recent construction of an ancient condition?
Pathophysiology

Central Sensitization
(Imbalanced of Nociception)

↑ Pro-nociceptor

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


↓ Anti-nociceptor

Serotonin, Noradrenaline, Dopamine IL-4, 10

Hybrid

Glutamate, Substance P

Staud R. Biology and therapy of fibromyalgia

Serotonin, Noradrenaline

Assess Key Symptom(s)
Clinical-Based

Acetaminophen
Weak-Opioid
(Reacutization)

Pain or others

Glutamate
Substance P

Pregabalin

Duloxetine, SNRI

Serotonin,
NE

Insomnia/Anxiety

Hypnotics

DOSE

TCAs

Anxiety/Depress

SSRIs

Russell IJ. Fibromyalgia syndrome: approach to management. Primary Psychiatry 2006;13(9):76-84.
QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.
How many common coping strategies [psychosocial subgroups] in Fibromyalgia patient?

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

- **Dysfunctional Subgroup**
  
  *Your pain is Axis I: MDD*

- **Interpersonal Distressed Subgroup**
  
  *You are Axis I: GAD*

- **Adaptive Coper Subgroup**
  
  *You have no pain or no problem*

---

Stress Reduction
Trigger or Co-morbid

22% in SLE\textsuperscript{1}  
22.2% in Migraine\textsuperscript{2}  
14.6% in MDD \textsuperscript{3}  
23.3% OCPD \textsuperscript{3}  
14% in Arthritis\textsuperscript{4,4}

Rheumatologist  
Neurologist  
Psychiatrist  
Rehabilitation

Cancer Pain
[Mix Nociceptors]

Cancer Pain

Acute Pain

Chronic Pain

CAM

Tumor itself

Bone Metastasis

Obstruction

Invade nerve

Treatments

Post-op Pain

CMT

RT

Psychological

Coper

Stress [Fear]

Depress

Co-morbid

Mental Metastasis
WHO 3 Steps Ladder  [Cancer Pain Only]

Sedation Score
Palliative Care
Facts of Life

Birth

Ageing

Pain

QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.
Nociception reflect anatomy and physiology, but cultural and social factors are the foundation for expression and treatment of pain.

“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
Vietnamese

American

Acute Pain

Consumption Mo equi

Inadequate pain control reported

0.9 mg.
8%

30.2 mg
80%


Is there any cross culture effect on coping strategy?

Vietnamese

Epidemiology: Prevalence? Subgroup Proportion?


Cancer Pain
[Mix Nocicepors]

Cancer Pain

Acute Pain

Chronic Pain

CAM

Tumor itself

Bone Metastasis
Obstruction
Invade nerve

Treatments

Post-op Pain
CMT
RT

Psychological

Coper
Stress [Fear]
Depress

Co-morbid
Believe

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

Expectations

Placebo → m-Opioid → Pain Relief

Conditioning

Drug

Active Ingredient (US) → Pain Relief (UR)

Pill Shape, Color, Taste etc. (CS)

Repeated Associations

Inactive Pill: Shape, Color, Taste → Pain Relief (CR)

Benedetti and Amanzio Prog Neuro 1997
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?

**Fig. 1.** Diagrammatic representation of the activation of functionally opposing endogenous opioidergic (placebo analgesia) and CCKergic systems (nocebo hyperalgesia) following placebo or nocebo suggestions.
Symbolic

Expectation (Belief) Conditioning

The power of Belief is Unbelievable
Culture [Attitude] & Dynamic
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.

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<th>1</th>
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<th>4</th>
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<th>7</th>
<th>8</th>
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<td>NO PAIN</td>
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<td>Face</td>
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<td>Verbal Descriptive Scale</td>
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<td>Wong-Baker Facial Grayscale</td>
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<table>
<thead>
<tr>
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<th>UN DOLOR LEVE</th>
<th>UN DOLOR FUERTES</th>
<th>DOLOR INDOMITABLE</th>
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<td>柔弱</td>
<td>中度</td>
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<td>ńh</td>
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<td>痛みがありません</td>
<td>少し痛い</td>
<td>いくらくらい</td>
<td>かなり痛い</td>
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*This image contains a visual representation of a pain assessment tool with various scales and descriptors in multiple languages.