PCSS O TRAINING
PROVIDERS' CLINICAL SUPPORT SYSTEM For Opioid Therapies

Unraveling the Mystery of Acute and Chronic Pain in the Child & Adolescent

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American Academy of Pediatrics

July 2, 2015

Providers' Clinical Support System – Opioid Therapies (PCSSO)

- Grant funded by SAMHSA
- Coalition of professional organizations
- Overarching goal: To offer evidence-based trainings on the safe and effective prescribing of opioid medications in the treatment of pain and/or opioid addiction.
- AAP = 2 Webinars per grant year (6 total)
- www.pcss-o.org

CME

CME credit is available for this Webinar upon completion of an evaluation.

More information will be provided near the end of this presentation.

Speakers

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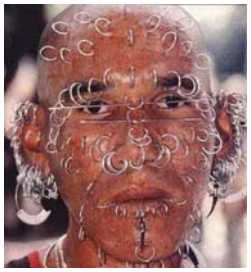
I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services discussed in this CME activity.

Educational Objectives

At the conclusion of this activity participants should be able to:

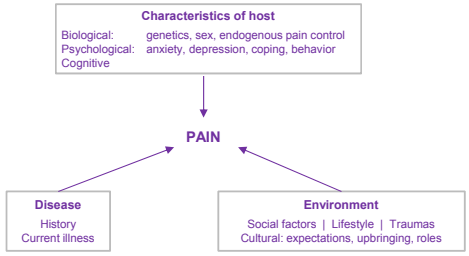
- ✓ Understand the development and neurobiology of central and peripheral pain pathways and their impact on treatment modalities.
- ✓ Describe misconceptions associated with pediatric and adolescent pain and review solutions to counteract these myths.
- ✓ Assess pain at different ages and the impact of pain on different spheres of activity.
- ✓ Recognize differences in pain perception and medication responses.
- ✓ Identify common conditions/comorbidities associated with acute and chronic pain.

IASP Definition of Pain



An **unpleasant** sensory and emotional experience associated with **actual or potential** tissue damage, or described in terms of such damage.

PAIN



Types of Pain- Nociceptive VS Neuropathic Pain

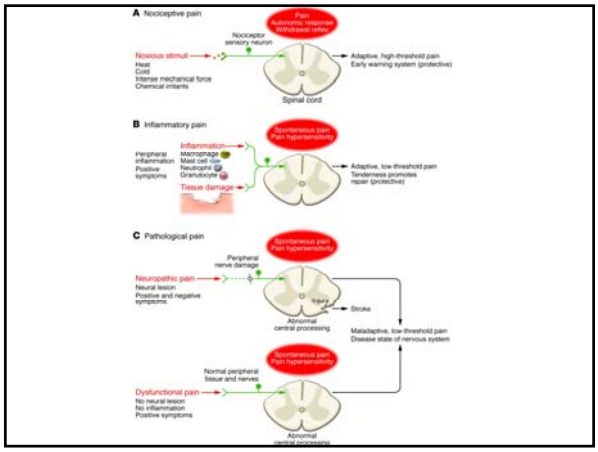
Pain can be broadly divided

(A) **Nociceptive pain** - the sensation or noxious stimulus associated with tissue-damage, and is usually protective.

(B) **Inflammatory pain** - hypersensitivity associated with tissue damage due to inflammatory mediators.

(C) **Pathological pain** - disease state caused by injury to either peripheral or central nervous system (neuropathic) or by its abnormal function (dysfunctional).

Woolf, C. J. (2010). What is this thing called pain? *The Journal of Clinical Investigation*, *120*(11), 3742–3744. doi:10.1172/JCI45178



Types of Pain

Table 2. Differences between nociceptive and neuropathic pain (modified from Serra[7], 2006).

Pain types	Nociceptive	Neuropathic
Definition	Pain caused by physiological activation of pain receptors	Pain caused by lesion or dysfunction of the somatosensory system, especially the nociceptive pathway
Mechanism	Natural physiological transduction	Ectopic impulse generation, among others
Localization	Local + referred pain	Confined to innervation territory of the lesioned nervous structure
Quality of symptoms	Ordinary painful sensation (good verbal descriptors)	New strange sensations (poor verbal descriptors)
Treatment	Good response (conventional analgesics)	Poor-moderate response (antidepressants, antiepileptics)

Schestatsky, P, & Nascimento, OJM. (2009). What do general neurologists need to know about neuropathic pain?. *Arquivos de Neuro-Psiquiatria*, *67*(4), 1175-1176

Mechanism-Based Classification of Pain

- Central sensitization/ central neurogenic mechanism/ central nociceptive mechanism
- Peripheral sensitization/ peripheral neurogenic mechanism
- Peripheral nociceptive mechanism
- Sympathetically maintained pain/ sympathetically dependent pain mechanism
- Cognitive-affective (psychosocial) mechanism

- Woolf CJ, Bennett GJ, Doherty M, et al. Towards a mechanism-based classification of pain? *Pain*. 1998;77:227-9.
- Kumar SP, Saha S. Mechanism-based Classification of Pain for Physical Therapy Management in Palliative care: A Clinical Commentary. *Indian Journal of Palliative Care*. 2011;17(1):80-86.

Mechanism-Based Classification of Pain

Central Sensitization

- An enhancement in the function of neurons and circuits in nociceptive pathways
- Caused by ↑ in membrane excitability and synaptic efficacy as well as by ↓ inhibition
- It is a manifestation of the remarkable plasticity of the somatosensory nervous system in response to activity, inflammation, and neural injury.

Latremoliere, A., & Woolf, C. J. (2009). Central Sensitization: A Generator of Pain Hypersensitivity by Central Neural Plasticity. *The Journal of Pain : Official Journal of the American Pain Society*, *10*(9), 895–926. doi:10.1016/j.jpain.2009.06.012

Mechanism-Based Classification of Pain

Peripheral Sensitization

- Pain arising as a direct consequence of a lesion or disease affecting the somatosensory system.
- Pathophysiological & pathomechanical responses to nerve injury affect:
  - Vascular tissue
  - connective tissue
  - impulse-conducting tissue components of the nervous system
- Leads to the neurobiological mechanisms responsible for the + and - symptoms associated with musculoskeletal peripheral neuropathic pain.

Treede R-D, Jensen TS, Campbell JN, Cruccu G, Dostrovsky JO, Griffin JW, et al. Neuropathic pain: redefinition and a grading system for clinical and research purposes. *Neurology*. 2008;70:1630–5

Mechanism-Based Classification of Pain

Peripheral Nociceptive Mechanism

- The pain arising from bodily tissues (both somatic & visceral) follows a characteristic anatomical pattern that corresponds to the tissue-at-fault.

Melzack R, Wall PD. Pain mechanisms. A new theory. *Science*. 1965;150:971–979

Mechanism-Based Classification of Pain

Sympathetically maintained pain/ sympathetically dependent pain mechanism

- Ongoing pain and allodynia, which is typically out of proportion to the injury.
- The causative event can vary widely from trivial injury to major trauma, or there may be no significant trauma at all.
- Allodynia and spontaneous ongoing pain in SMP is a result of chronic maladaptive sensitization of wide dynamic range neurons in the dorsal horn of the spinal cord, that leads to release of catecholamines and is not due to heightened sympathetic tone.

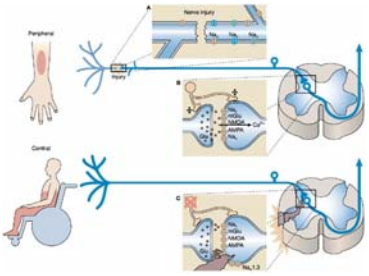
Mechanism-Based Classification of Pain

Cognitive-affective mechanism

- Psychological factors play a significant role in various aspects of chronic pain experience among patients:
  - Causative
  - Receptive
  - Perceptive
  - Cognitive
  - Reportive
  - Behavioral
- While cognitive factors include patients' knowledge and maladaptive understanding of pain and 'pain behavior', affective factors involve emotions and feelings associated with the 'pain experience.'

Gamsa A. The role of psychological factors in chronic pain: II, A critical appraisal. *Pain*. 1994;57:17–29.

Mechanisms of Central Sensitization



Reprinted by permission from Macmillan Publishers Ltd: Finnerup NB, Jensen TS. Mechanisms of disease: mechanism-based classification of neuropathic pain-a critical analysis. *Nat Clin Pract Neurol*. 2006;2(2):107–115 www.nature.com/npg.

Developmental Implications of Pain

- Infants exposed to a painful stimulus (circumcision) exhibit an exaggerated pain response to future painful events (immunization) 6 months later.
- This effect can be modulated with application of EMLA cream, or penile block.

Taddio A, Katz J, Ilersich AL, Koren G. Effect of neonatal circumcision on pain response during subsequent routine vaccination. Lancet 1997;349:599–603

Physiology of Neonatal Transmission

7 weeks	Appearance of skin receptors and sensory nerves around mouth
8-10 weeks	Cortex begins to form
13 weeks	Maturation of neurons in dorsal horn of spinal cord
15 weeks	Subplate zone of cortex formed
16-18 weeks	Thalamic fibers reach cortex; Appearance of hormonal and circulatory stress hormones
20 weeks	Skin receptors throughout fetus; 1st EEG recorded; Response to sound, touch, light
32 weeks	Appearance of inhibitory mechanisms

Developmental Implications of Pain

What happens if the pain impulse happens before 32 weeks?

- C fiber to dorsal horn connections lead to prolonged excitation following a single stimulus, repetitive stimulation leads to temporal summation and wind-up and lowered thresholds to subsequent stimuli, via increased density of NMDA receptors in spinal cord.
- These changes result not only in ↑ transmission, but also modulation and long term potentiation.
- Opioid receptor uncoupling may also play a role in regulating pain mechanisms

Developmental Implications of Pain

- Nociceptive pathways are functional after birth, and pain produces significant physiologic and behavioral responses in both preterm and term neonates.
- Clinical evidence for adverse impacts on neurodevelopmental outcome and subsequent pain response is increasing.
- Evaluating the impact of early life pain and/or analgesia requires consideration of intercurrent illness and stress, particularly in preterm-born neonates requiring prolonged intensive care treatment.
- In addition, genetic and environmental factors, and social and family factors can modulate subsequent behavioral responses.

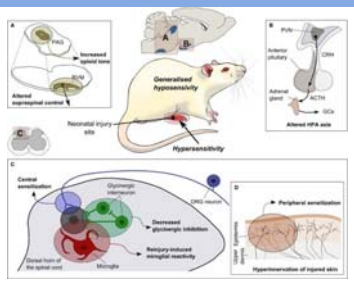
Walker S.M. Biological and neurodevelopmental implications of neonatal pain. *Clin Perinatol*. 2013;40:471–491

Developmental Implications of Pain

- Persistent alterations in sensory function have been shown in a range of preclinical models of early pain and injury, and allow evaluation of underlying mechanisms and potential preventive interventions.
- Adequate management of pain is a goal of care at all ages.
- ***Specific evaluation of efficacy and effects in early life is required because responses in the developing nervous system may differ from those seen at older ages.***

Walker S.M. Biological and neurodevelopmental implications of neonatal pain. *Clin Perinatol*. 2013;40:471–491

Developmental Implications of Pain



Schwaller F, Fitzgerald M. The consequences of pain in early life: injury-induced plasticity in developing pain pathways. *The European Journal of Neuroscience*. 2014;39(3):344-352.

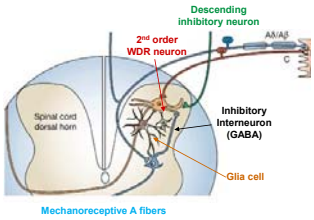
Pain Receptors

	Aβ fibers	Aδ fibers	C fibers
Diameter	Large	Small 2-5μm	Smallest <2μm
Myelination	Highly	Thinly	Unmyelinated
Conduction velocity	> 40 ms-1	5-15ms-1	< 2ms-1
Receptor activation thresholds	Low	High and low	High
Sensation on stimulation	Light touch, non-noxious	Rapid, sharp, localised pain	Slow, diffuse, dull pain

Nociceptors

- These are specialized sensory receptors responsible for the detection of noxious (unpleasant) stimuli, transforming the stimuli into electrical signals, which are then conducted to the central nervous system.
- They are the free nerve endings of primary afferent Aδ and C fibers.
- Distributed throughout the body (skin, viscera, muscles, joints, meninges) they can be stimulated by mechanical, thermal or chemical stimuli.
- Primary afferent Aβ fibers carry non-noxious stimuli

Nociceptors

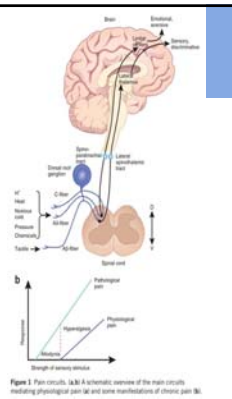


Wide-Dynamic Range Neurons

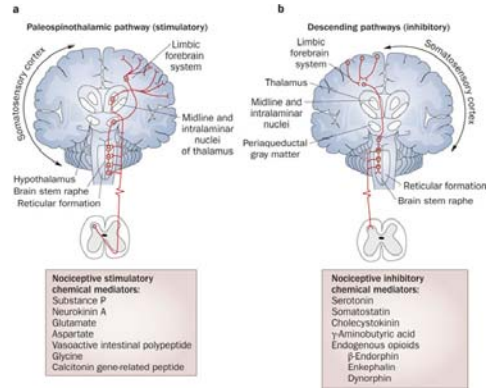
- WDR neurons located in lamina V
- Receive A-**β**, A-**δ** and C fiber input
- Respond to both benign and painful stimulus in a graded (dynamic) fashion
- Responsible for referred pain due to organ convergence from skin/muscle and various visceral organs – such as angina in the left neck and arm

Adapted by permission from Macmillan Publishers Ltd: Ralf Baron (2006) Mechanisms of Disease: neuropathic pain--a clinical perspective. *Nat Clin Pract Neurol* 2: 95–105 doi:10.1038/ncpneuro0113 www.nature.com/npg

Pain Pathways



Reprinted by permission from Macmillan Publishers Ltd: Kuner R. Central mechanisms of pathological pain. *Nat Med*. 2010;16(11):1258–66. www.nature.com/npg



Reprinted by permission from Macmillan Publishers Ltd: Borenstein, D. (2010) The role of the rheumatologist in managing pain therapy *Nat Rev Rheumatol*. doi:10.1038/nrrheum.2010.27 www.nature.com/npg

Impact of Pain

- In 2011, at least 100 million adult Americans have common chronic pain conditions, a conservative estimate because it does not include acute pain or children.
- Pain is a significant public health problem that costs society at least $560-$635 billion annually, an amount equal to about $2,000.00 for everyone living in the U.S.
- This includes the total incremental cost of health care due to pain from ranging between $261 to $300 billion and $297-$336 billion due to lost productivity (based on days of work missed, hours of work lost, and lower wages).

Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education and Research (Institute of Medicine Report)

Impact of Pain

- Most people in chronic pain have multiple sites of pain.
- For US adults reporting pain, causes include: severe headache or migraine (16.1%), low back pain (28.1%), neck pain (15.1%), knee pain (19.5%), shoulder pain (9.0%), finger pain (7.6%), and hip pain (7.1%).
  Data from CDC and National Center for Health Statistics
- According to the National Health and Nutrition Examination Survey (NHANES) data, 17% of US children, aged 4-18, experience frequent or severe headaches, including migraine, over the course of a year. Before puberty, boys and girls have headaches at approximately the same rate, but after 12, the rate of recurrent and severe headaches rises among girls.

Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education and Research (Institute of Medicine Report)

Impact of Pain

- Over one-third of school-age children will sustain injuries severe enough to be treated by a doctor or nurse. The yearly costs have been estimated to be 1.8 billion US$
- Traumatic injuries occur in more than 20 million US children each year, and are the leading source of death in children over the age of 1 year
- Prevalence of children who ever experienced toothache ranges from 5 to 33%
- Headache in pediatric population is substantially underdiagnosed.
- Studies indicate an overall prevalence of 8 up to 60% in various children and adolescent populations
- Accurate prevalence of severely ill children with life-limiting conditions in need of palliative care is not available, but figures are tending to converge on 10 per 10000 children aged 0-19 per annum

Loizzo, Alberto, Stefano Loizzo, and Anna Capasso. "Neurobiology of pain in children: an overview." *The open biochemistry journal* 3 (2009): 18. www.ncbi.nlm.nih.gov/pmc/articles/PMC2695605/pdf/TOBIOCJ-3-18.pdf

Impact of Pain

- Cross sample of sequential 100 presentations to a Pediatric Chronic Pain Clinic
  - Abd pain 18%
  - Back pain 14%
  - Headache 14%
  - Fibromyalgia 12%
  - CRPS 11%
  - Other Musculoskeletal pains 11%
  - Chest and Rib pain 6%
- These patients were predominantly adolescent females (73%) with frequent coexisting clinically significant anxiety (63%) and depression (84%).

Vetter, T. R. (2008). A clinical profile of a cohort of patients referred to an anesthesiology-based pediatric chronic pain medicine program. *Anesthesia and Analgesia*, *106*(3), 786–794

Impact of Pain

- Large-scale epidemiologic studies in Netherlands have observed a 25% to 46% point prevalence of chronic pain of at least three months duration in the pediatric age group
- Headache, abdominal pain, limb pain, and back pain being the most frequent locations

Common chronic pain-related functional issues:
- Sleep problems (54%)
- Inability to pursue hobbies (53%)
- Eating problems (51%)
- School absence (49%)
- Inability to interact with friends (47%)

Perquin CW et al: Pain in children and adolescents: a common experience. *Pain*. 2000 Jul; 87(1): 51-8.

Impact of Pain

- Chronic "benign" pediatric pain persists for at least 1 to 2 years in 30%-45% of cases
- In a cohort of 8, 11 and 14 year olds, with chronic headache or chronic back pain, 59% of females and 39% of males reported similar pain at 21, 24, and 27 years of age
- Children and adolescents with chronic pain:
  - Utilize various healthcare services
  - Require prescription analgesic medications
- Both at a significantly greater rate than their healthy peers leading to greater healthcare costs

Perquin CW et al: Pain in children and adolescents: a common experience; Pain, 2000 Jul; 87(1): 51-8.
Brattberg G. Do pain problems in young school children persist into early adulthood? A 13-year follow-up. Eur J Pain. 2004;8:187–99

Brenda Golianu, MD

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Misconceptions Regarding Pain In Infancy and Childhood

Myth	Reality
Newborns and infants are incapable of feeling pain. Children do not feel pain with the same intensity as adults because a child's nervous system is immature.	By 20 weeks' gestation, a fetus has most of the anatomic and functional requirements for pain processing. Term infants have the same level of sensitivity to pain as older infants and children. Preterm infants may actually have greater sensitivity
Children are not in pain if they can be distracted or if they are sleeping.	Children use distraction to cope with pain, but they soon become exhausted when coping with pain and fall asleep.

Misconceptions Regarding Pain In Infancy and Childhood

Myth	Reality
Children can tell you if they are in pain. Only give medication if they don't tell but appear to be in pain.	Children may be too young to express pain or afraid to tell anyone other than a parent about the pain. The child fears the treatment for pain may be worse than the pain itself.
Children run the risk of becoming addicted to pain medication when used for pain management.	Exposure to opioids alone in the perioperative or acute pain condition setting does not cause addiction.

Role of Genetics in Pain Perception

Females have…

- Greater risk of chronic pain disorders
- Greater sensitivity to noxious stimuli
- Lower thresholds, greater ability to discriminate,
- Higher pain ratings, and less tolerance of noxious stimuli than males
- Higher reporting of multiple pains in more body regions than men

- Fillingim RB. Sex, gender, and pain: women and men really are different. *Curr Rev Pain*. 2000;4(1):24-30
- Berkley KJ. Sex differences in pain. *Behav Brain Sci*. 1997 Sep;20(3):371-80; discussion 435-513.

Role of Genetics in Pain Perception

- Chronic musculoskeletal pain is more common in females than males
- Women reported significantly higher ratings of worst and current pain intensity but there were no differences on the rating for least pain.

- Tsang A, et al., Common chronic pain conditions in developed and developing countries: Gender and age differences and comorbidity with depression-anxiety disorders. *J Pain*. 2008;3
- Smith BH, Elliott AM, Chambers WA, Smith WC, Hannaford PC, Penny K. The impact of chronic pain in the community. *Fam Pract*. 2001;18:292–299

Role of Genetics in Pain Perception

- Myofascial Pain Syndrome: prevalence among chronic back pain patients was significantly high, with female gender being a significant risk factor
- Compared to males, females reported a longer duration of chronic widespread pain and time since FMS diagnosis and they had a higher tender point count

- Chen CK, Nizar AJ. Myofascial pain syndrome in chronic back pain patients. *Korean J Pain*. 2011 Jun;24(2):100-4
- Häuser W et al. Demographic and clinical features of patients with fibromyalgia syndrome of different settings: a gender comparison. *Gend Med*. 2011 Apr;8(2):116-25

Role of Genetics in Pain Perception

- Pharmacodynamics and pharmacokinetics of analgesics change with age, changes not necessarily linear.
- Because of incomplete maturation of the hepatic enzyme system, neonates have reduced weight-normalized clearance of many drugs, but children 2-6 years of age have greater clearance than adults
- More frequent dosing
- Body composition: neonates have lower plasma protein concentration; they should receive lower doses of drug with high protein binding

Role of Genetics in Pain Perception

- Females (6%) showed greater prevalence of chronic neuropathic pain compared with males (3%)
- Women are at greater risk for neuropathic pain than men.

Torrance N, et al. ,The epidemiology of chronic pain of predominantly neuropathic origin: Results from a general population survey. *J Pain.* 2006;7:281–289

Role of Genetics in Pain Perception

- Migraines - Prepubertal girls and boys have equal prevalence; lifetime prevalence increases to 18% for women and 6% for men after puberty
- TM joint disorders - no difference between boys and girls in childhood and higher prevalence in women after puberty
- Menstrual cycle affects pain due to IBS, headaches, TMD, fibromyalgia
- Pregnancy reduces frequency of migraines and TMD pain

- Lipton RB et al., Prevalence and burden of migraine in the United States: Data from the American Migraine Study II. *Headache.* 2001;41:646–657pain: Are the effects dependent on gender? Pain. 2001;91:65–78
- Stewart WF, et al., Prevalence of migraine headache in the United States: Relation to age, income, race, and other sociodemographic factors. *JAMA.* 1992;267:64–69.
- LeResche L. Epidemiology of temporomandibular disorders: implications for the investigation of etiologic factors. *Crit Rev Oral Biol Med.* 1997;8:291–305.

Role of Genetics in Pain Perception

- NMDA antagonism enhances opioid antinociception greater in male versus female animals.
- Opioid Agonists - high estradiol levels are associated with reduced sensitivity to opioid agonists.

- Grisel Jeet al., The influence of dextromethorphan on morphine analgesia in Swiss Webster mice is sex-specific. *Pharmacol Biochem Behav.* 2005;81:131–138.
- Fillingim RB, Ness TJ. Sex-related hormonal influences on pain and analgesic responses. *Neurosci Biobehav Rev.* 2000;24:485–501

Role of Genetics in Pain Perception

In Summary

- ✓ Most common types of pain are more common in females than males
- ✓ Women have greater pain after an invasive procedure than men
- ✓ Women show higher levels of temporal summation of pain
- ✓ Gonadal hormones have significant influence on pain perception and analgesic responses

Pain Assessment in different age groups

	Self-Report	Observational	Physiological
Infant	-----	Premature Infant Pain Profile; Neonatal/Infant Pain Scale	-----
Child	Faces Pain Scale – Revised; Wong-Baker FACES Pain Rating Scale	FLACC (Face Legs Arms Cry Consolability Scale);	Comfort
Adult	Numerical Rating Scale ; Visual Analog Scale; Brief Pain Inventory	-----	-----

Pain Assessment in different age groups

FLACC Behavioral Scale

Categories	Scoring		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid, or jerking
Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractable	Difficult to console or comfort

Each of the five categories (F) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability is scored from 0-2, which results in a total score between zero and ten.

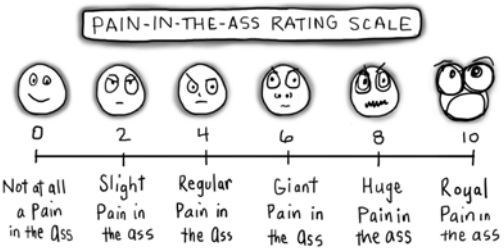
rFLACC

Categories	Scoring		
	0	1	2
F Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested *appears sad or worried*	Frequent to constant frown, clenched jaw, quivering chin *distress-looking face: expression of fright or panic*
L Legs	Normal position or relaxed	Uneasy, restless, tense *occasional tremors*	Kicking, or legs drawn up *marked increase in spasticity, constant tremors or jerking*
A Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense *mildly agitated (eg, head back and forth, aggression); shallow, splinting respirations intermittent sighs*	Arched, rigid, or jerking *severe agitation, head banging, shivering (not rigors); breath-holding, gasping or sharp intake of breath; severe splinting*
C Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint *occasional verbal outburst or grunt*	Crying steadily, screams or sobs, frequent complaints *repeated outbursts, constant grunting*
C Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractable	Difficult to console or comfort *pushing away caregiver, resisting care or comfort measures*

Pain Assessment in different age groups

Wong-Baker FACES® Pain Rating Scale

Pain Assessment in different age groups



Glossary of Pain

Neuropathic Pain	Pain initiated or caused by a primary lesion or dysfunction in the nervous system
Allodynia	Pain due to a stimulus that does not normally provoke pain
Dysesthesia	An unpleasant abnormal sensation, which can be spontaneous or evoked
Paresthesia	An abnormal skin sensation that can include tingling, pricking or numbness
Temporal Summation	A mechanism whereby repeated stimuli elicit increasing responses in spite of unchanged stimulus intensity
Hyperalgesia	An increased response to a stimulus that is normally painful
Diffuse Noxious Inhibitory Control	Inhibition of nociceptive neurons in the spinal and trigeminal dorsal horns by noxious stimulation of widespread areas of the body distant from the neurons' receptive field

Common Presentations to a Pediatric Clinic

Acute Pain	Cancer Pain	Chronic Nonmalignant Pain
Procedure related pain	Tumor related pain	Headaches
Perioperative pain	Therapy related pain	Musculoskeletal pains or pain from Rheum conditions like JRA
Burns		Chronic abdominal pain
Trauma		Sickle cell disease, hemophilia
Acute Illness		CRPS

Common Presentations to a Pediatric Clinic

"And with 10 being the highest, you're sure you're only at a 6?"

Q & A

- Please use the chub box to submit a question for the speakers.
- Follow-up discussion – July 8th @ 11am central
  - 877-273-4202 | Room #: 9156562
- Obtaining CME
  - After the event, you will receive a link taking you to an evaluation. Upon completion, you will be emailed your CME certification.

- The American Academy of Pediatrics (AAP) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.
- The AAP designates this live activity for a maximum of 1.0 *AMA PRA Category 1 Credit(s)™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.
- This activity is acceptable for a maximum of 1.0 AAP credits. These credits can be applied toward the AAP CME/CPD Award available to Fellows and Candidate Members of the American Academy of Pediatrics.
- The American Academy of Physician Assistants (AAPA) accepts certificates of participation for educational activities certified for *AMA PRA Category 1 Credit™* from organizations accredited by ACCME. Physician assistants may receive a maximum of 1.0 hours of Category 1 credit for completing this program.
- This program is accredited for 1.0 NAPNAP CE contact hours of which 0 contain pharmacology (Rx), (0 related to psychopharmacology) (0 related to controlled substances), content per the National Association of Pediatric Nurse Practitioners (NAPNAP) Continuing Education Guidelines.

PCSS TRAINING
PROVIDERS' CLINICAL SUPPORT SYSTEM
For Opioid Therapies

PCSS-O is a collaborative effort led by American Academy of Addiction Psychiatry (AAAP) in partnership with: Addiction Technology Transfer Center (ATTC), American Academy of Neurology (AAN), American Academy of Pain Medicine (AAPM), American Academy of Pediatrics (AAP), American College of Physicians (ACP), American Dental Association (ADA), American Medical Association (AMA), American Osteopathic Academy of Addiction Medicine (AOAAM), American Psychiatric Association (APA), American Society for Pain Management Nursing (ASPMN), International Nurses Society on Addictions (IntNSA), and Southeast Consortium for Substance Abuse Training (SECSAT).

For more information about PCSSO, visit: www.pcss-o.org
For questions PCSSO, email: pcss-o@aaap.org

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