

Chronic Pain Management in Pediatric Patients: A Conservative Approach

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Objectives & Goals

- Identification of early signs in the onset of Chronic Pain Syndromes
- Recognize pertinent physical findings on exam
- Awareness of challenges that are encountered in managing this patient population
- Describe 3 interventions in managing pain in children

Epidemiology

Pediatric

- Estimated to affect 15-20% of children
- (Goodman & McGrath, 1991).

Systematic Review 2011

- Girls > Boys
- Increase with age for most pain types (except for ABD pain)
- Lower socioeconomic status
- Psycho-social varies, anxiety, depression, low self-esteem

- Research suggests prevalence rates of childhood pain have increased over the last several decades.

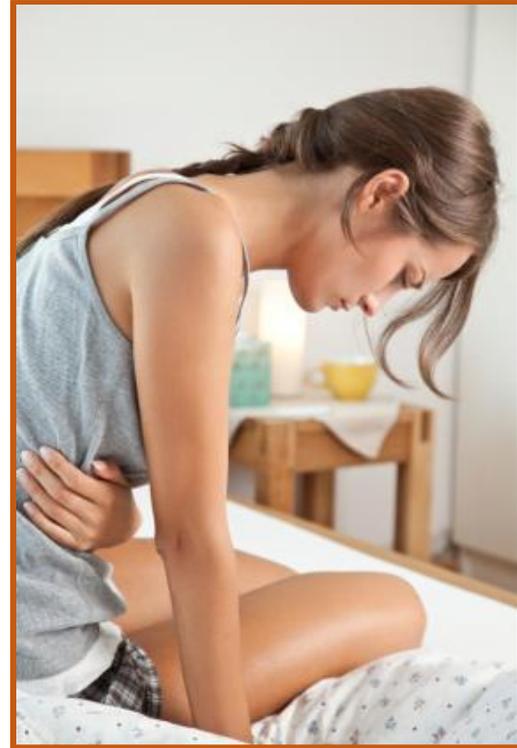
Common Medical Conditions leading to chronic pain in kids...

- Arthritis
- Sickle cell disease
- Rheumatologic disease
- Inflammatory bowel disease
- Trauma: physical, chemical, thermal, surgical
- CRPS
- Phantom limb pain
- Lower back pain
- HIV/AIDS
- Cancer

- WHO guidelines on the pharmacological treatment of persisting pain in children with medical illnesses. World Health Organization 2012. Geneva.
- Walker SM. Pain in Children: recent advances and ongoing challenges. *British Journal of Anaesthesia* 2008.

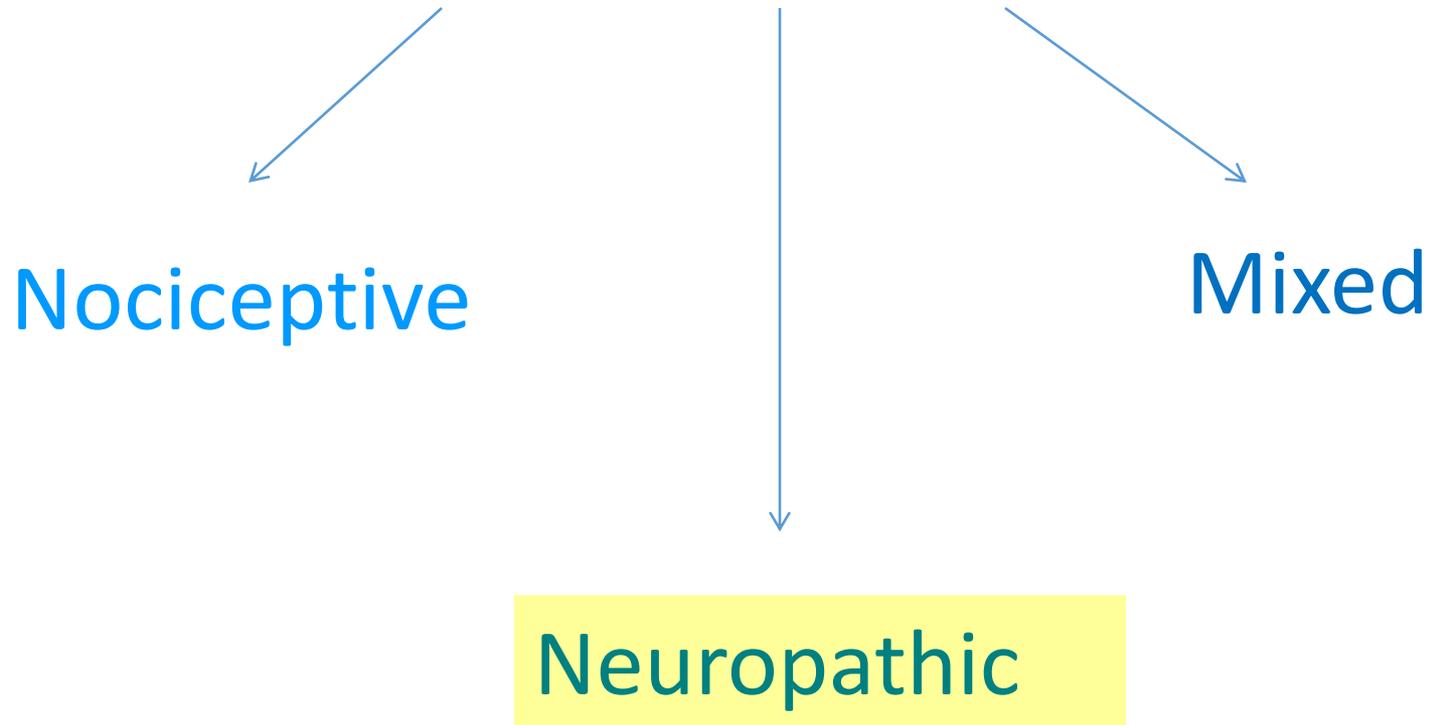
Risk for Developing Chronic Pain...

- Common occurrence
 - f:m 30%:19%
 - ages 12-15, peak at 14
- Multiple sites
 - 50%
 - HA and abdominal pain (25%)
- Sex
 - Female – 6:1 ratio
- Age
 - < 5 years – lowest risk
 - > 12 years – highest risk
- Location
 - Lower extremity >> Upper extremity
- Type
 - Boys : back and limb pain
 - Girls: headache and abdominal pain



- Walker SM. Pain in children: recent advances and ongoing challenges. *British Journal of Anesthesia* 2008.
- Walco G. Neuropathic Pain in Children: Special Considerations. *Mayo Clin Proc* March 2010.

Classification of Pain



Terms

- Causalgia
- Reflex Sympathetic Dystrophy
- Complex Regional Pain Syndrome
- Diffuse Amplified Pain syndrome

Work-up

History

PMHX
Family HX

Physical exam

Vitals
Pain Assessment

Studies

Radiological
Laboratory

Differential
diagnosis

Treatment

Case Presentation

- RM is a 13y.o. female who presented to the ER in October, 2013
- L ankle injury after jumping off a desk. Recommendation: walking cast
- November 11, 2013 cast removal +increasing pain, +allodynia, swelling, and inability to move the left leg.
- Repeat x-ray that showed spotty demineralization
- January of 2014 physical therapy 1-2 times a week (improvement)
- PMHx:
 - 2012-Left lateral malleolus, the talus, calcaneus, metatarsals, and other tarsal bones
 - 2012-Salter –Harris type 1 fracture at the proximal phalanx of the thumb; Right wrist fracture while playing on the playground at age 9yrs; Buckle fractures B Upper Extremities (falling off playground equipment) at 3 yrs of age.

Symptoms

- Sensory
 - Allodynia
 - Hyperalgesia
- Weakness
 - Contractures
 - Dystonia
- Motor
 - Atrophy

Symptoms

- Vasomotor
 - Hot
 - Cold
- Hair/Nails
- Trophic
 - Skin
 - Texture/Appearance





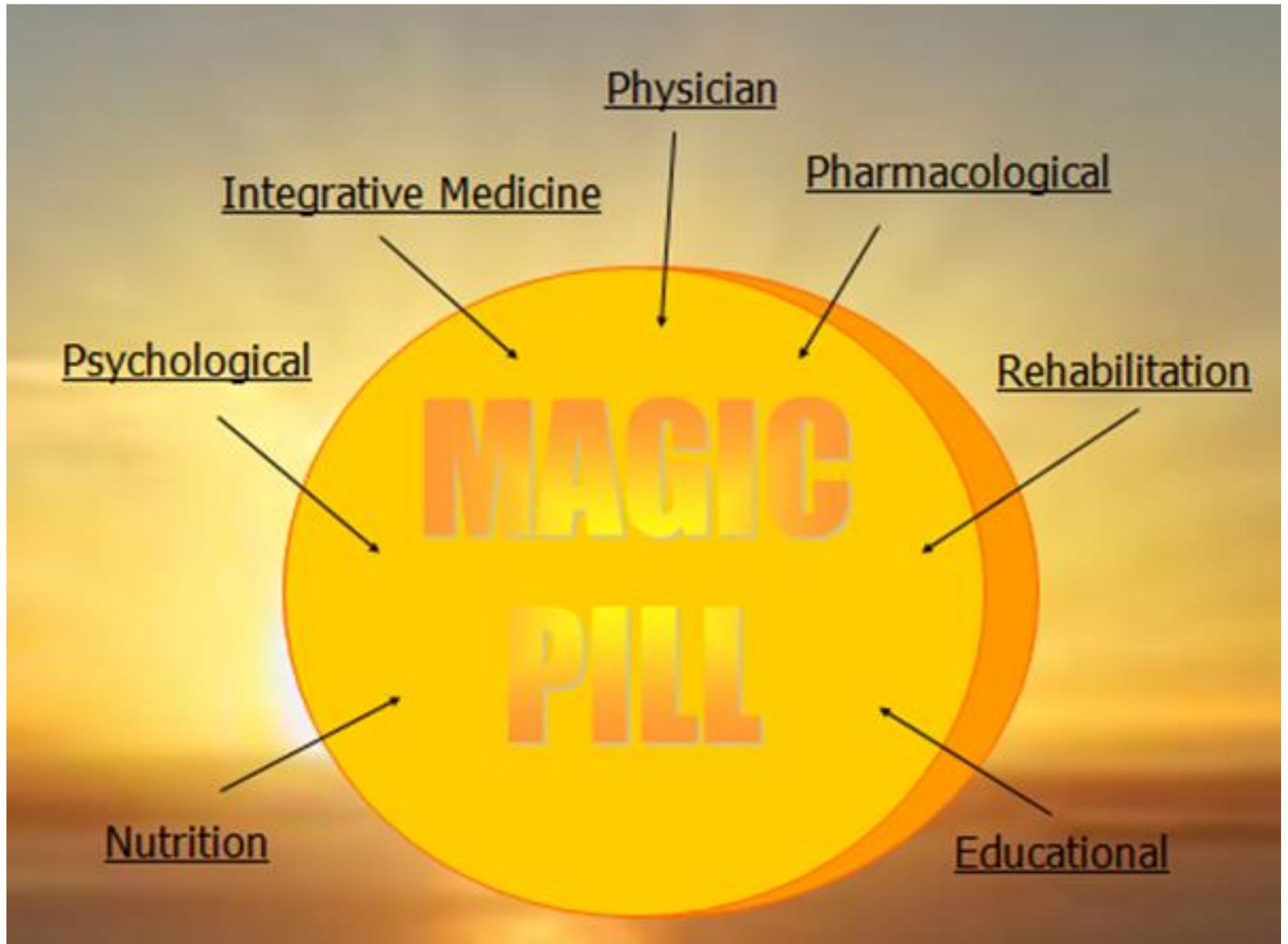
Work-up

- Radiological
 - X rays
 - MRI
 - Triple phase bone scans
 - EMG
 - Thermography
 - DEXA

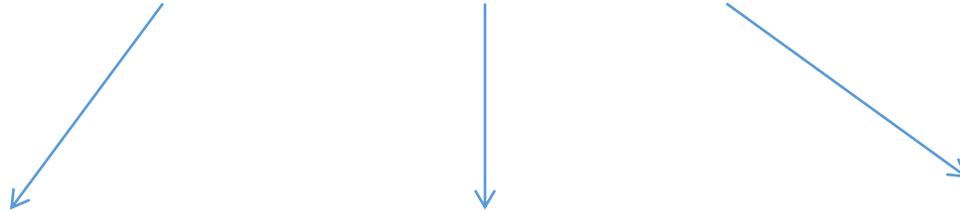
Work up

Laboratory Studies

- Inflammatory
 - CBC
 - ESR
 - CRP
- Metabolic
 - Vitamin D SCREEN
 - TFT's



Non-Opioid Pharmacological Options



Membrane Stabilizers

- Gabapentin
- Pregabalin
- Carbamazepine
- Valproic acid

Antidepressants

- Amitriptyline
- Nortriptyline
- Cymbalta
- Duloxetine (SNRI)

Muscle Relaxants

- Baclofen
- Diazepam
- Benzodiazepines

Other Options

- Melatonin
- Bisphosphonates

Therapeutic Options

Education

Rehabilitation

- **Functional Restoration**
- Aquatic Therapy
- Physical Therapy
- Occupational Therapy

Behavioral Health

- Cognitive Behavioral Therapy
- Biofeedback
- Guided Visual Imagery

Integrative Medicine

- Acupuncture
- Myofascial
- Art, Music, & Dance
- Meditation
- Nutrition



Impact on Child

- 30-68% - daily life restrictions
- 90% less sports participation
- Strained peer relationships
- 50% - sleep difficulties
- Potential for permanent alteration of child's development and future role functioning
- Academic
 - Poor performance
 - Frequent school absence

3 Stages of CRPS

- Acute
- Dystrophic
- Atrophic





Options for Therapy

Recognize (now FREE in App Store)

Recognize is a programme developed by NEURO ORTHOPAEDIC INSTITUTE (AUSTRALASIA) to help train left/right discrimination as part of a comprehensive rehabilitation programme. It's available for a short time as a free application for Iphones and Ipads. It will later be available as an android application.

Options for Therapy

Mirror Therapy



Acupuncture

