



Paediatric Pain Assessment

Pain ECHO Education Event (E3)

Naiyi Sun, MD

November 20, 2025



Changing the world by connecting healthcare providers.



Faculty/Presenter Disclosure

- **Faculty:** Naiyi Sun
- **Relationships with commercial interests:**
 - Grants/Research Support: None
 - Speakers Bureau/Honoraria: None
 - Consulting Fees: None
 - Other: None



This program has received financial support from the Ontario Ministry of Health



Learning Objectives

By the end of this session, participants will be able to:

- Describe the context of chronic pain in children
- Describe the prevalence of chronic pain in children, and common pediatric pain presentations/diagnoses
- Describe the importance of assessing pain in children using a biopsychosocial model



Definitions

Pain

- **An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.**
 - Pain is always a personal experience that is influenced to varying degrees by biological, psychological, and social factors.
 - Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons.
 - Through their life experiences, individuals learn the concept of pain.
 - A person's report of an experience as pain should be respected.
 - Although pain usually serve an adaptive role, it may have adverse effects on function and social and psychological well being.
 - Verbal description is only one of several behaviors to express pain; inability to communicate does not negate the possibility that a human or a nonhuman animal experience pain.



Acute vs Chronic Pain

Acute Pain

- the normal, **predicted, physiological, and time-limited** response to an adverse chemical, thermal, or mechanical stimulus associated with surgery, trauma, or acute illness

Chronic Pain

- Pain that persists **beyond expected** healing time (>3 months), or **recurrent** pain that occurs at least three times throughout **three month** period



Pain Classifications

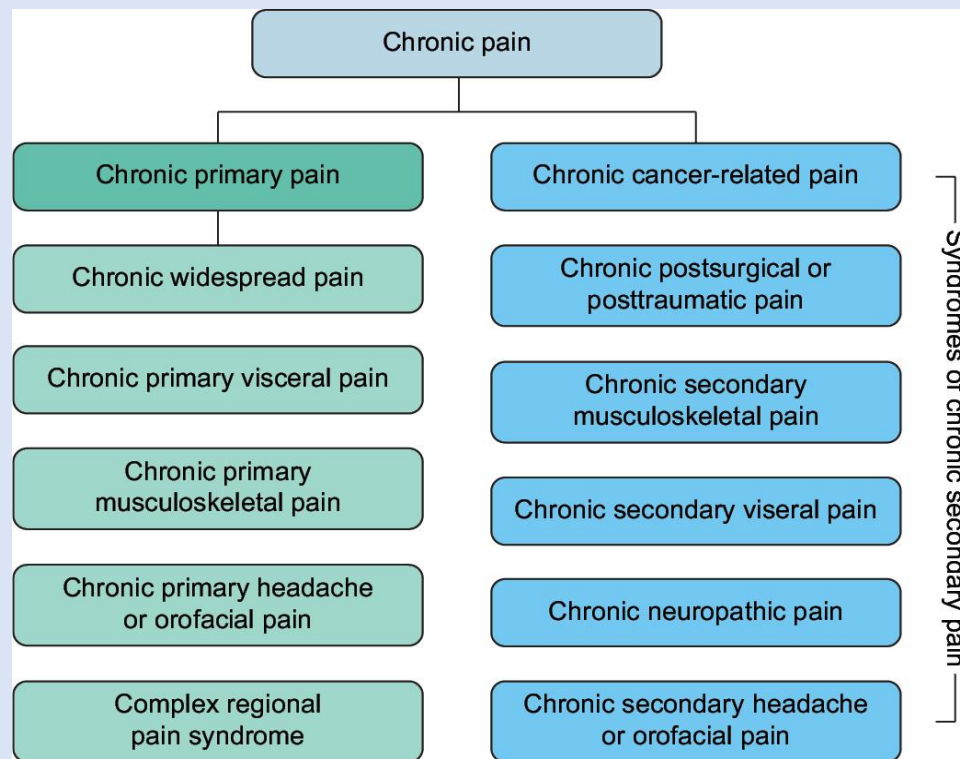


Figure 1. Chronic pain in the ICD-11. The classification distinguishes between conditions of *Chronic primary pain* and syndromes of known etiology or established pathophysiology that are associated with chronic (secondary) pain. Figure created by author, modified from Reference 5.

Treede RD et al. Chronic pain as a symptom or a disease: the IASP Classification of Chronic Pain for the International Classification of Diseases (ICD-11). *Pain*. 2019 Jan;160(1):19-27.

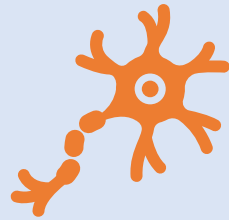


Types of Pain:



Nociceptive pain

Pain from actual or potential damage to non-neural tissue.



Neuropathic pain

Pain that arises from a lesion or disease of somatosensory nervous system.



Nociplastic pain:

Pain from a dysfunction of the nervous system.



Pain in Children is Common:



Procedural pain:

Hospitalized children experience an average of 6 painful procedures every 24 hours.



Pain in hospitalized children:

1/3 of hospitalized children have moderate or severe pain intensity on their pain assessment.



Chronic Pain:

1/5 children experience chronic pain



Pooled Prevalence Estimate by Pain Type

Pain Type	Prevalence Estimate (95% CI)	Sex Differences
Headache	25.7 (22.2-29.3)	Female>Male
Musculoskeletal	25.7 (17.3-35.1)	Female>Male
Multisite/general	21.0 ((18.5-23.6)	Female>Male
Back	19.1 (16.6-21.7)	Female>Male
Abdominal	17.3 (14.3-20.5)	Female>Male
Other	6.9 (4.4-10.0)	Female>Male
Total	20.8 (19.2-22.4)	Female>Male



Question:

- What percentage of kids with chronic pain become adults with chronic pain?

1. $\frac{1}{4}$
2. $\frac{1}{3}$
3. $\frac{2}{3}$
4. $\frac{3}{4}$



Furthermore...

- 2/3 of kids with chronic pain become adults with chronic pain
- Young adults experiencing pain in adolescence:
 - 34% less likely to attain a high school diploma.
 - 17% less likely to attain a college education.
 - Less likely to have a full time job.
 - More likely to receive public assistance.
 - Increased risk of prescription opioid misuse in early adulthood.
- By treating pain in youth, we can reduce the burdens of pain and addiction in adults

Murray CB et al. Long-term impact of adolescent chronic pain on young adult educational, vocational, and social outcomes. *Pain*. 2020;161(2): 439-45.

Groenewald CB et al. Associations between adolescent chronic pain and prescription opioid misuse in adulthood. *The Journal of Pain*. 2019;20(1):28-37.



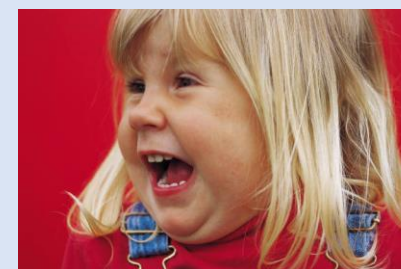
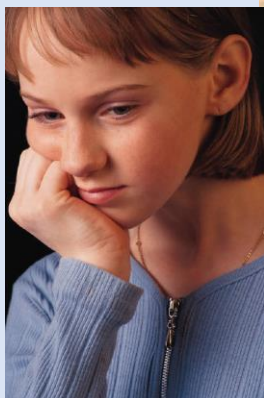
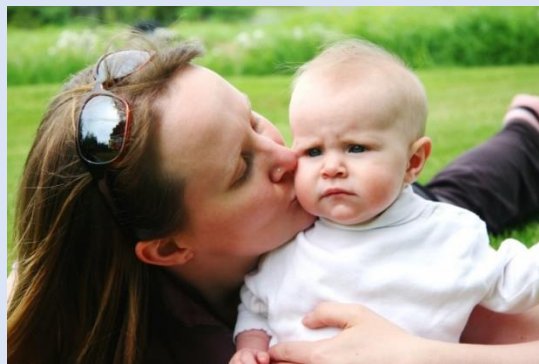
Kate

- 12 yo girl who slipped on ice last winter and developed right wrist pain.
- She was seen in ED, had Xray which did not show any fractures, and was diagnosed with a sprained wrist.
- Recommended to wear a splint for 2 weeks.
- Progressively worsening pain in the past 3 months.



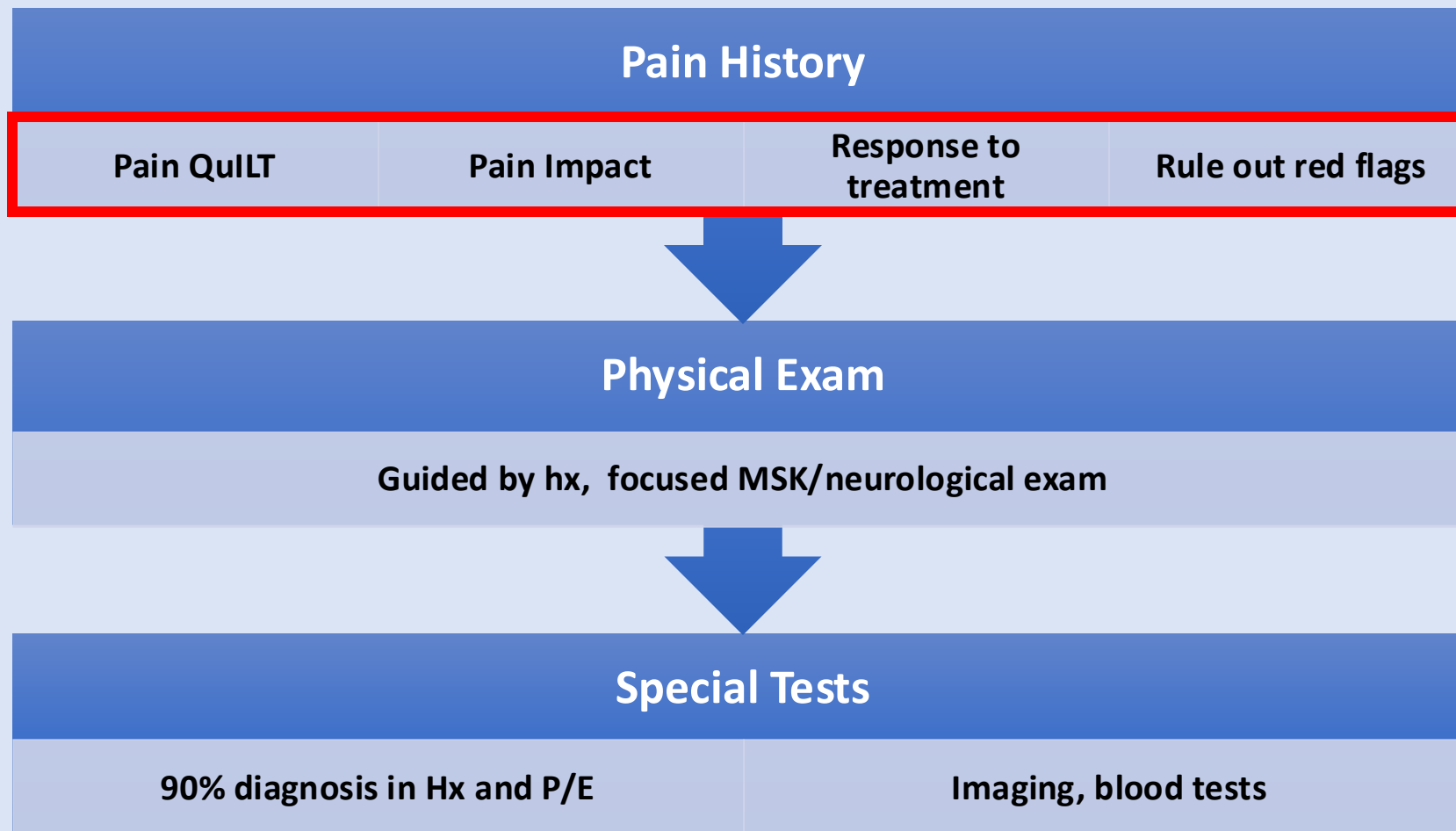


What Does a Child in Pain Look Like?





Pain Assessment





Pain History (current)

- History of the current pain problem (QuILT)
 - Quality: pain descriptors
 - Intensity
 - Location / radiation
 - Timing – duration, variability
 - Aggravating and relieving factors



Pain Intensity Measurement:

1. Self Reporting:

- Pain should be self-reported whenever possible since pain is a subjective experience.

2. Observation (Behavioral):

- Self report is not always available depending on the child's age and his/her ability to communicate

Young and Non-Verbal Children:

FLACC PAIN RATING SCALE for children 1 to 3 years of age

The **FLACC (Face, Legs, Activity, Cry, Consolability)** is a behavioral pain assessment scale for use for non-verbal or pre-verbal patients unable to self-report their level of pain. Rate your child in each of the five measurement categories, add together, and document total pain score (0 – 10).

	0	1	2
Face	No 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	Arches, 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 "talking to"; Can be distracted	Difficult to console or comfort

Younger Children:

Faces PAIN SCALE - REVISED (FPS-R) for children over age 3

Point to the face that shows how much you hurt.



0



2



4



6



8



10

These faces show how much something can hurt. The left-most face shows no pain. The faces show more and more pain up to the right-most face - it shows very much pain.

Wong-Baker FACES® Pain Rating Scale



0

No Hurt



2

Hurts Little Bit



4

Hurts Little More



6

Hurts Even More



8

Hurts Whole Lot

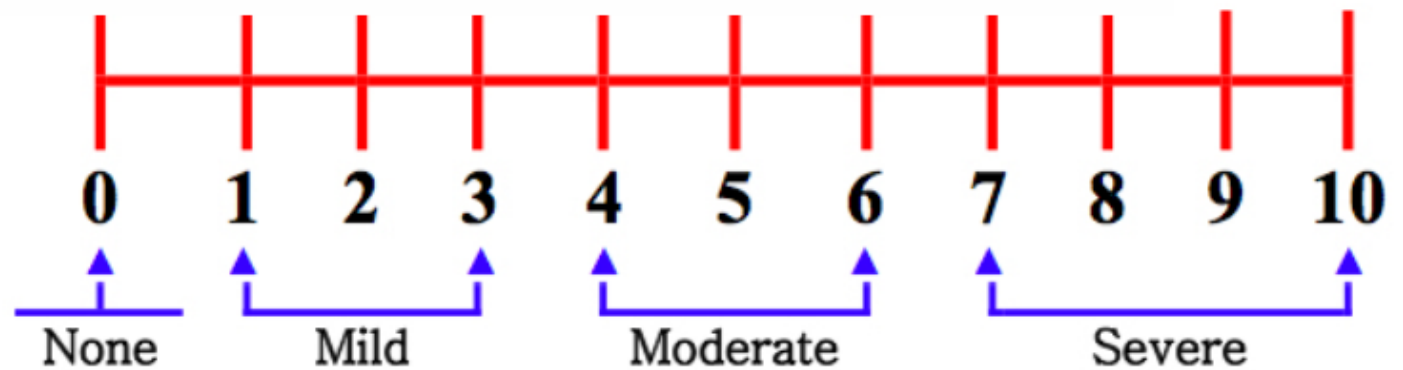


10

Hurts Worst

Older Children > 7:

Numerical Rating
Scale (NRS)





Pain Assessment in Patients with Cognitive Impairment: RFLACC

- FLACC can be revised with input from family caregiver.
- Add additional behaviors are indicators of pain of their individual child.

(REVISED) FLACC Scale			
SCORING			
Categories	0	1	2
Face	No particular expression or smile.	Occasional grimace or frown, withdrawn, disinterested, Sad, appears worried.	Frequent to constant quivering chin, clenched jaw, distressed looking face, expression of fright/ panic.
Legs	Normal position or relaxed; usual tone and motion to limbs.	Uneasy, restless, tense, occasional tremors.	Kicking, or legs drawn up, marked increase in spasticity, constant tremors, jerking.
Activity	Lying quietly, normal position, moves easily, regular, rhythmic respirations.	Squirming, shifting back and forth, tense, tense/guarded movements, mildly agitated, shallow/ splinting respirations, intermittent sighs	Arched, rigid or jerking, severe agitation, head banging, shivering, breath holding, gasping, severe splinting.
Cry	No cry (awake or asleep)	Moans or whimpers: occasional complaint, occasional verbal outbursts, constant grunting	Crying steadily, screams or sobs, frequent complaints, repeated outbursts, constant grunting.
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to: distractible	Difficult to console or comfort, pushing caregiver away, resisting care or comfort measures.
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.			
References: Merkel, S. et al. The FLACC: A Behavioural Scale for Scoring Postoperative Pain in Young Children, Pediatric Nurse 23(3): 293-297, 1997. Copyright: Jannetti Co. University of Michigan Medical Centre.			
Malviya, S., Vopel-Lewis, T. Burke, Merkel, S., Tait, A.R. (2006). The revised FLACC Observational Pain Tool: Improved Reliability and Validity for Pain Assessment in Children with Cognitive Impairment. (Pediatric Anesthesia 16: 258-265).			



Common Sources of Pain in Children with Severe Neurological Impairment:

GERD	Central neuropathic pain
Gastric ulcer	Visceral hypersensitivity
Urinary tract infection	Dystonia
Hip subluxation	Spasticity
Occult fracture	More than 1 source of pain can co-exist
Dental Pain	



Ask About Red Flags:

Abdominal Pain	Headaches	MSK Pain
• GI blood loss • Persistent Vomiting • RUQ or RLQ pain • Involuntary weight loss • Pain that wakes child from sleep • Difficulty swallowing • Severe diarrhea	• Focal neurologic signs • Persistent vomiting • Age < 3 years • Unexplained fever • Morning headaches • Headaches that awaken the child from sleep	• Joint redness, edema. • Pain/stiffness in the morning • Pain at rest, relieved by activity • Bony tenderness • Weight loss

Kate Continued:

- **Symptoms:**

- Pain spread from wrist to involve whole forearm from above elbow to hand.
- Constant Pain 6-8/10.
- Described as burning, tingling, and shooting.
- Pain worse with any movement, touch, or can increase randomly.
- Appears swollen and has intermittent mottled discoloration.
- Right forearm and hand very painful to touch.
- Decreased range of motion due to pain.





What is Kate's Diagnosis?

Complex Regional Pain Syndrome

“STAMP”

- Sensory**
 - allodynia
 - hypo-/hyperalgesia
 - hypo-/hyperesthesia
- Trophic**
 - skin, hair, nail changes
- Autonomic**
 - swelling
 - edema
 - sweating
- Motor**
 - weakness
 - contractures
 - atrophy
- Pain**

Pain Interference

- Sleep time and quality
- Physical Functioning
 - Decreased activity levels
 - Impact on pursuit of life goals
- School Functioning
 - Absenteeism
 - Stress and anxiety related to missed academic work
 - Bullying
 - Isolation from peers
- Emotional functioning
 - Anxiety and depressive symptoms





Influencing Factors

Pain Belief:

- Belief that chronic pain is harmful or disabling
- Diagnostic uncertainty
- Expectation on passive pain management

Coping Style:

- High pain catastrophizing
- Internalizing behavior
- Fear avoidance behavior

Parent factors:

- Parental depression and anxiety disorders
- Parent history of chronic pain

Common Parental Misconception

My child needs more rest because he has pain.

The more I do for my child, the faster she will recover.

My child should not be expected to resume normal activities until her pain is completely gone.

I should always know how much pain my child is experiencing.

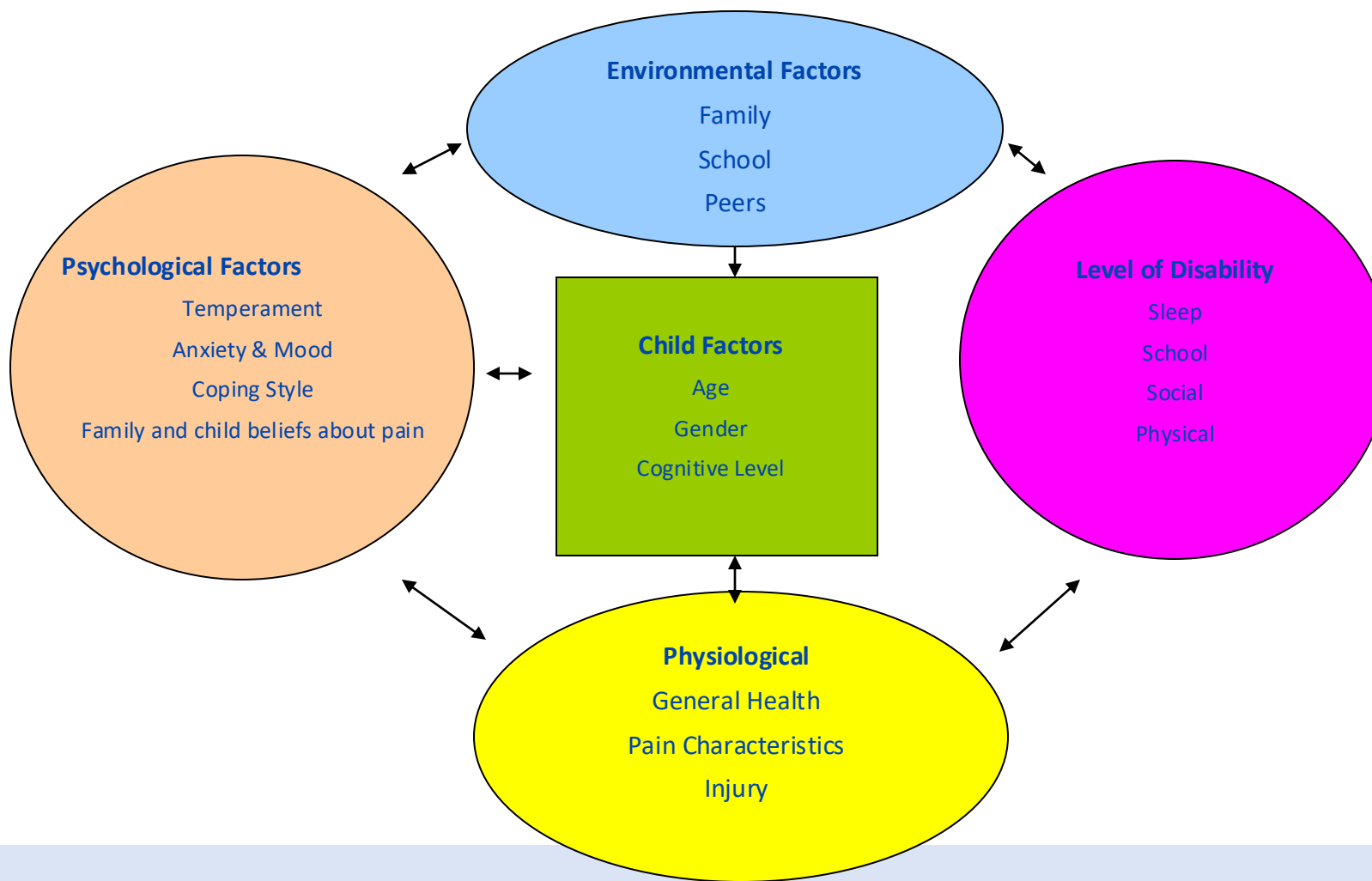


H.E.A.D.S.S Assessment – Adolescent Interview

- **H**ome & Environment
- **E**ducation & Employment
- **A**ctivities
- **D**rugs
- **S**exuality
- **S**uicide/Depression



Biopsychosocial Model



Understanding Chronic Pain

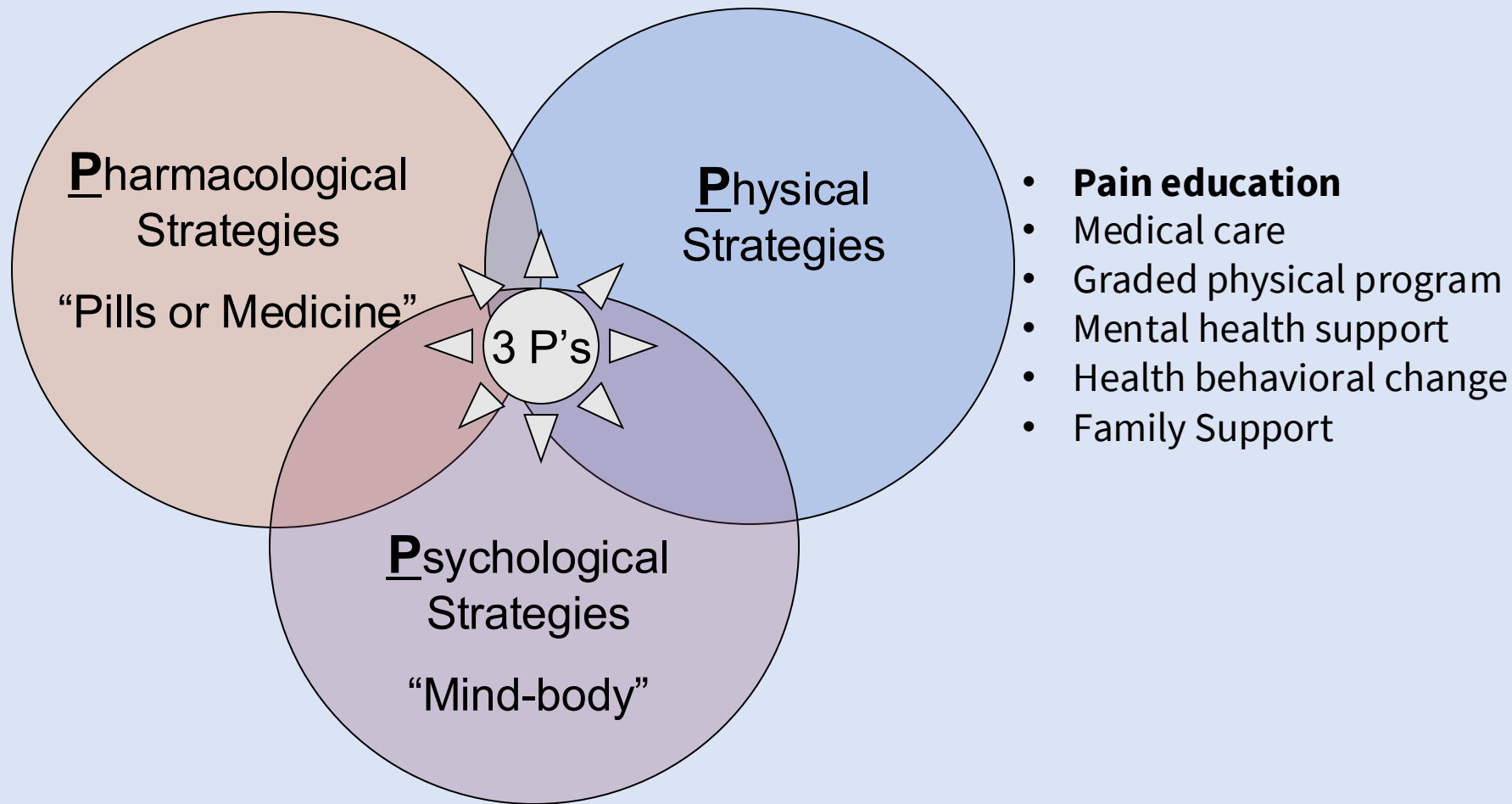




Kate – continued..

- **Sleep:**
 - Waking up frequently due to pain at night, but able to fall back asleep quickly.
 - Fatigue during the day.
- **School:**
 - Missed ¼ of school days in the last few months.
 - Unable to write or type at school.
 - Worried about people bumping into her arm in the hallway.
- **Physical:**
 - Stopped gymnastics
 - Sitting out of gym class
 - Mom has to help with many ADLs.
- **Social:**
 - Sit out at recess as friends are doing active play.
- **Mood:**
 - Has separation anxiety, tends to worry.
- **Family:**
 - Grandfather passed away recently who she was close to.

Comprehensive Pain Treatments



Important
Message

Key Take-away Messages

- Pain in children is common and undertreated
- Undertreated pain is associated with long-term impact on HRQL
- Thorough pain assessment using biopsychosocial model matters.

Online Pediatric Pain Curriculum:



SickKids
LEARNING
INSTITUTE

**ACADEMY
ONLINE**

Course CatalogRegisterLog In

Select Course Categories ▾

Free



OPPC: Acute Pain – Special Considerations

Enroll Now

Free



OPPC: Assessment and Measurement of Paediatric Pain

Enroll Now

Free



OPPC: Chronic Pain Management – Special Considerations

Enroll Now

Free



OPPC: Development of

Free

Free



Questions?



naiyi.sun@sickkids.ca