

PAIN ASSESSMENT IN CHILDREN

The most critical component of pain management in any patient is to first **identify** a patient who is in pain. It is not always easy. If a patient is able to self report, when asked, they can affirm or deny that they have pain. In young children, who may be non-verbal, or who can but refuse to give you an answer, it is not so straightforward. This is when we can use pain assessment tools to help us determine the likelihood of pain.

After we have identified a patient in pain, we need to do a more in-depth pain assessment to help us diagnose the cause, measure the intensity of, and to treat pain. It includes a thorough assessment through history taking, physical examination and investigations.

Pain Screening, Assessment, Intervention and Reassessment (SAIR) Guide

- The "gold standard" in pain assessment is **self-reporting** of the pain. As such, all patients who are cognitively able to report should be asked if they have any pain.
- Pain is more than just a number.
- Ask the patient for characteristics of the pain: Pain assessment can be done using "WILDA". (WILDA is a helpful acronym to remember)

W – Word Descriptors (What does your pain feel like? E.g. Sharp, dull, achy, sore, ants crawling, pins and needles, squeezing, throbbing)

I – Intensity (How would you rate your pain from 0 to 10? Is that pain manageable for you?)

L – Location (Can you show me where your pain is? Note: there may be more than one site of pain)

D – Duration of the pain (How long the pain escalates/ lasts for?)

A – Aggravating or alleviating factors (What makes the pain worse/ better?)

Pain Intervention

- Pharmacological: Paracetamol, NSAIDS, Opioids and Adjuvants
- Non-pharmacological: Multiple modalities, including distraction, deep breathing exercises, engaging in activities, playing, listening to music, imagining a happy place, etc.

Pain Reassessment

- Reassessment of the pain should occur within 15-30 minutes after an intervention.
- Reassessment should take into account not just pain relief but also the side effects and adverse effects of the treatment, and the impact of pain and treatment effects on the patient's function and quality of life.
- If the patient is still in pain or distressed, further intervention may be required.

Post-operative Pain Assessment

- Post-operative pain scores must be assessed & charted daily for 2 situations:
 - At Rest (i.e. Baseline Pain)
 - On Movement/Deep breathing (i.e. Incident or Dynamic Pain)

Procedural/ Incidental Pain

- Analgesia when prescribed as PRN can be given for pain, prior to procedures or physiotherapy, and pre-emptively to improve function (ADLs/ therapies etc.)
- All medications prescribed as PRN should have the indication clearly stated
- Breakthrough analgesia is given in situations where severe pain exacerbations are expected despite well controlled pain at rest. For example, with physiotherapy mobilizations or wound dressing changes post operatively. Breakthrough analgesia can be given 1 hour after the regular analgesia, if the pain does not subside.

Pain Measurement Tools

Pain measurement tools are available for children of all ages, however, the pain measurement tool should be matched to the **age and development** of the child. Wherever possible, patients should be asked to report their pain, **pain is what the patient says it is**. However, the perception and communication of the child's pain depends on his or her intellectual and social development. Furthermore, interpreting pain scales can be a challenge in young children since their ratings are based on prior experience of pain.

Therefore, the patient's caregiver should be involved in thorough pain assessment and verify if the child's painful experience is hampered by physical or psychological factors.

Age Group	Pain Measurement Tool
Neonates/Infants	Neonatal Pain Assessment Tool (NPAT) Neonatal/Infant Pain Scale (NIPS)
Non-verbal patients >2 months <4 years old	FLACC scale
Verbal patients <7 years old	Wong-Baker Faces scale
Verbal patients 7 and above	Numeric rating scale
Patients who are unable to self-report, or have cognitive disability	FLACC scale

Observational Scales

- Assessing pain in young children can be challenging if they are nonverbal or have developmental disabilities.
- There are various observational scales that have proven to be valid in eliciting objective pain scores for this group of patients.
- The accuracy of the observational assessment tools for pain is dependent on observers' knowledge and experience.
- Furthermore, **pain can overlap with manifestations of other states of distress** (such as hunger) and confounding clinical factors (such as sepsis and heart disease) that can reduce the sensitivity and specificity of the observational assessment tools for pain.

FLACC

Category	Scoring		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quiver chin
Leg	Normal position or relax	Uneasy, restless and 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 complaints	Crying steadily, screams or sobs, frequent complaints
Consolability	Content and relax	Reassured by occasional touching or hugging "talking to", distractible	Difficult to console or comfort

- FLACC is a behavioral scale for children more than 2 months to 3 years old and patients who are not able to communicate or are cognitively impaired including intubated patients.
- Each category contains a score from 0 - 2 (see below). Observe the patient's behavioral state and match it to the appropriate description.

- Observe for about 2 to 5 minutes if awake, and for at least 5 minutes if sleeping.
- The sum total of the score will range from 0-10, wherein
 - 0 = No Pain
 - 1 – 3 = Mild Discomfort
 - 4 – 6 = Moderate Pain
 - 7 – 10 = Severe Discomfort or Pain
- As discussed earlier on, scores must be considered in the light of confounders such as distress and the child's clinical condition.

Neonatal Infant Pain Scale (NIPs)

- Effective management of pain in early life can be challenging. Repeated pain monitoring is essential in intensive care management, given the frequency of painful procedures e.g. heel prick, and the occasional need for major surgery.
- Many pain assessment tools for infants and neonates are available and validated.
- In our institution we use the Neonatal infant pain scale (NIPs) for pain assessment in infants and neonates. This scale is recommended for 2 months old or less.
- As discussed earlier on, scores must be considered in the light of confounders such as distress and the child's clinical condition.

The following is a sample of a scoring system, interpretation and suggested intervention for NIPs

Parameter Name	Combined Data Field	Possible Value
Neonatal Infant Pain Scale (NIPs)	Facial Expression / Score	0: Restful face, neutral expression 1: Tight facial muscles; furrowed brow, chin, jaw, 0: Quiet, not crying
	Cry / Score	1: Mild moaning, intermittent 2: Loud scream; rising, shrill, continuous
	Breathing Patterns / Score	0: Usual pattern for this infant 1: Drawing, irregular, tachypnea, gagging, breath holding
	Arms / Score	0: No muscular rigidity; occasional random movements of arms 1: Tense, straight, rigid and/or rapid extension, flexion
	Legs / Score	0: No muscular rigidity; occasional random leg movement 1: Tense, straight, rigid and/or rapid extension, flexion
	State of Arousal / Score	0: Quiet, peaceful sleeping or alert random leg movement 1: Alert, restless, and thrashing
	Pain Score	Numeric (0 - 7) 6
	Nursing Comfort Intervention (If pain score >= 3)	Breastfeeding
		Containment
		Swaddle
		Cuddle
		Pacifier
		Stroking
		Rocking
		Re-positioning
		Reduce lighting
		Minimal Handling
	Medical intervention (if pain score >= 5)	Free text
	Free text	Free text
	Free text	Free text

Each category contains a score from 0 - 1, which results in a total score between 0 and 7. Please refer to the table below for the corresponding intervention for the calculated score.

Pain Level	Intervention
0-2 = mild to no pain	None
3-4 = mild to moderate pain	Non-pharmacological intervention with a reassessment in 30 minutes
>4 = severe pain	Non-pharmacological intervention and possibly a pharmacological intervention with reassessment in 30 minutes

Self-Reporting Scales

Wong Bakers Faces Pain Rating Scales (WBS)



- Wong Bakers Faces Pain Rating Scale is a self reporting scale best used for children ages 3-7 years old.
- It is essential to explain what each face represents and match the number to the face. Ask patients to point which face best represents their pain and discomfort.
- Do not assume 'no pain' equates to 0/10 and severe pain is 10/10. Explain this to the patient before asking the patient to report the exact face with the corresponding number (2,4 etc.)
- Always correlate the scores with physical (activity) and psychological (anxiety) manifestations. If deemed necessary, verify the obtained scores with the caregiver. Ask them questions that will justify whether the given scores are true or there are psychological and social factors involved.
- It is **necessary to show this scale** to patients

Numeric rating scale



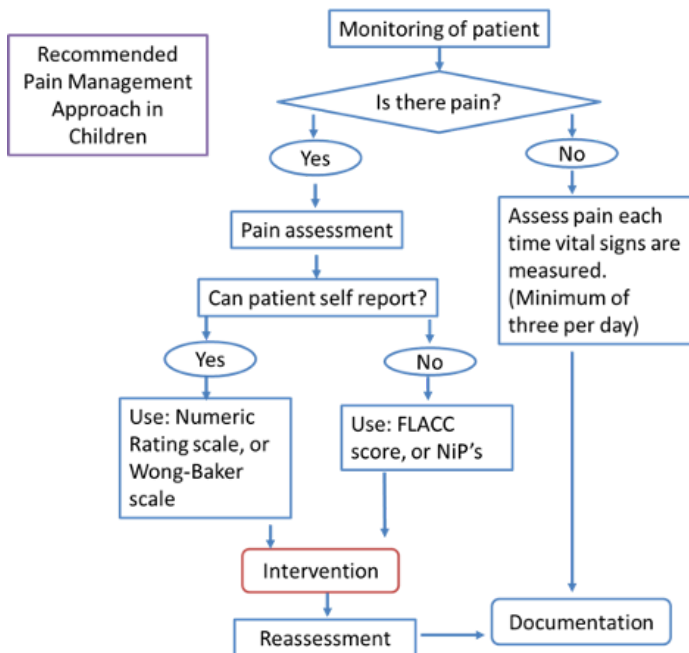
- Numeric Rating Scale for pain is best suited for children 7 years old and above.
- The child's ability to understand the concept of rank and order is essential for the accuracy of pain score.
- Do not assume 'no pain' equates to 0/10 and severe pain is 10/10. Explain this to the patient before asking the patient to report the exact score (1, 2 etc.)
- Always correlate the scores with physical (activity) and psychological (anxiety) manifestations. If deemed necessary verify the obtained scores with the caregiver. Ask them questions that will justify whether the given scores are true or there are psychological and social factors involved.
- Not necessary to show this scale to patients: it can be described "on a scale of 0 to 10, 0 being no pain and 10 being the worst pain imaginable, how bad is your pain now?"

Severity of pain assessment (using FLACC, Wong Baker and Numeric Pain Scores)

Pain score	Severity of pain
0	No pain
1-3	Mild
4-6	Moderate
7-10	Severe

- Needs active pain management/additional analgesics if score is > 3

Summary



References:

1. *Acute Pain Management: Scientific Evidence Fifth Edition, 2020, Volume 2: Paediatrics, Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine*
2. *KKH Paediatric anaesthesia handbook and guidelines*
3. *KKH CE Clinical Guidelines*