

Pain Control: Pain Assessment in Infants and Young Children: The FLACC Scale

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Source: *The American Journal of Nursing*, Vol. 102, No. 10 (Oct., 2002), pp. 55-56+58

Published by: Lippincott Williams & Wilkins

Stable URL: <http://www.jstor.org/stable/3522977>

Accessed: 25-12-2015 16:27 UTC

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By Sandra Merkel, MS, RN, Terri Voepel-Lewis, MS, RN, and Shobha Malviya, MD

Pain Assessment in Infants and Young Children: The FLACC Scale

A behavioral tool to measure pain in young children.

This month's column is the third in a series on pain assessment in infants and young children (see *Pain Control*, August and September). It focuses on pain assessment in the child who is too young to report pain using scales such as a 0-to-10 scale or a pain rating scale depicting faces.

As discussed in August's *Pain Control*, infants and young children are at particularly high risk for inadequate pain management: they are unable to describe their pain and, as a result, are often poorly assessed. Although pain assessment in these populations is a challenge, it must be performed on a regular basis using reliable and valid methods in order to ensure that pain is identified and treated.

The child's behaviors, physiologic parameters, physical examination, and parental reports are included in the assessment of pain in a young child. Crying, body posture, and mobility are valid indicators of whether a child is in pain.¹ Physiologic indicators, such as increased heart rate and blood pressure, vary among children just as they do in infants. They also vary in response to illness and should therefore be used only in conjunction with other pain assessment data.² It's important to

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The FLACC Behavioral Pain Assessment 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Face	No particular expression or smile	Occasional grimace or frown; withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin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 is scored from 0–2, resulting in a total score between 0 and 10.

Reprinted with permission: Merkel SI, et al. The FLACC: a behavioral scale for scoring postoperative pain in young children. *Pediatr Nurs* 1997;23(3):293-7. The FLACC scale was developed by Sandra Merkel, MS, RN, Terri Voepel-Lewis, MS, RN, and Shobha Malviya, MD, at C. S. Mott Children's Hospital, University of Michigan Health System, Ann Arbor, MI.

remember that physiologic and behavioral indicators customarily used to assess acute pain may be minimal in infants and children with chronic pain.² For example, heart rate and blood pressure may be below normal levels. Physical examination includes a general inspection of the child's physical state and a review of body systems.

FLACC PAIN SCALE

The FLACC is a behavioral scale that has been validated for assessment of postoperative pain in children between the ages of two months and seven years. The acronym "FLACC" represents five categories: **F**ace, **L**egs, **A**ctivity, **C**ry, and **C**onsolability. Responses in each category are scored between 0 and 2, for a

maximum total score of 10.

To use the FLACC scale, the clinician should observe a child for one to five minutes. A pain score is obtained by reviewing the descriptions of behavior in each of the FLACC categories and selecting the number that most closely matches the observed behavior. The numbers obtained for each category are added together to obtain the total pain score, which will be between 0 and 10.

Clinicians can observe the child's behaviors during routine care. It may be necessary to touch and reposition the child to determine if pain is present with movement and to better assess tension and rigidity in the body. Although it's difficult to obtain scores when a child is asleep and

How to Use the FLACC

In patients who are awake: observe for 1 to 5 minutes or longer. Observe legs and body uncovered. Reposition patient or observe activity. Assess body for tenseness and tone. Initiate consoling interventions if needed.

In patients who are asleep: observe for 5 minutes or longer. Observe body and legs uncovered. If possible, reposition the patient. Touch the body and assess for tenseness and tone.

Face

- Score 0 if the patient has a relaxed face, makes eye contact, shows interest in surroundings.
- Score 1 if the patient has a worried facial expression, with eyebrows lowered, eyes partially closed, cheeks raised, mouth pursed.
- Score 2 if the patient has deep furrows in the forehead, closed eyes, an open mouth, deep lines around nose and lips.

Legs

- Score 0 if the muscle tone and motion in the limbs are normal.
- Score 1 if patient has increased tone, rigidity, or tension; if there is intermittent flexion or extension of the limbs.
- Score 2 if patient has hypertonicity, the legs are pulled tight, there is exaggerated flexion or extension of the limbs, tremors.

Activity

- Score 0 if the patient moves easily and freely, normal activity or restrictions.
- Score 1 if the patient shifts positions, appears hesitant to move, demonstrates guarding, a tense torso, pressure on a body part.
- Score 2 if the patient is in fixed a position, rocking; demonstrates side-to-side head movement or rubbing of a body part.

Cry

- Score 0 if the patient has no cry or moan, awake or asleep.
- Score 1 if the patient has occasional moans, cries, whimpers, sighs.
- Score 2 if the patient has frequent or continuous moans, cries, grunts.

Consolability

- Score 0 if the patient is calm and does not require consoling.
- Score 1 if the patient responds to comfort by touching or talking in 30 seconds to 1 minute.
- Score 2 if the patient requires constant comforting or is inconsolable.

Whenever feasible, behavioral measurement of pain should be used in conjunction with self-report. When self-report is not possible, interpretation of pain behaviors and decisions regarding treatment of pain require careful consideration of the context in which the pain behaviors are observed.

Each category is scored on the 0–2 scale, which results in a total score of 0–10.

Interpreting the Behavioral Score

- 0 = Relaxed and comfortable
- 1–3 = Mild discomfort
- 4–6 = Moderate pain
- 7–10 = Severe discomfort or pain or both

not moving, the face of a sleeping child in severe pain may register tension, and the child often wakes up at the slightest touch.

The first study of the FLACC scale was conducted on a post-anesthesia care unit (PACU) among children who had undergone a variety of surgical procedures.¹ In the first phase of the

study, interrater reliability was established by comparing the FLACC scores of two observers with the global pain rating of a PACU nurse who had observed the same child. In the second phase, the FLACC scale was tested with two more groups of children experiencing pain. This time, PACU nurses assigned

FLACC pain scores prior to, immediately after, and at 10-, 30-, and 60-minute intervals after the administration of nonopioid or opioid analgesics. Preanalgesic scores were significantly higher. In the third phase of the study, a positive correlation was shown between FLACC scores and scores obtained using the Observational Pain Scale. Nurses who assisted with this research found the FLACC scale easy to use and went on to implement it in their own clinical practices.

Another study showed a positive correlation between FLACC scores and the self-report of 30 children ages three to seven years who had postoperative pain, further supporting the validity of the scale.³ Currently, pediatric nurses at Children's Medical Center of Dallas are studying the FLACC scale in children with many types of pain. So far the data suggest that the FLACC scale has been effective in assessing pain in 148 children younger than three years of age who were admitted to a variety of units, including the ICU, the PACU, surgical and trauma units, and the hematology and oncology units.

INTERPRETATION OF BEHAVIORS

Disparities have been reported between pain ratings based on observed behaviors and those based on self-report.⁴ Behavioral cues, however, remain the primary indicators of pain in children who are unable to use a self-report pain scale.⁵ The difficulty in using observation to assess pain is that there may be a difference between what clinicians and parents expect to find and what they actually observe. To make an accurate assessment of pain based on observed behaviors, it's extremely important to consider the child's circumstances and environment at the time of the assessment. For

example, crying and body movement may be responses to hunger and anxiety and are not necessarily indicators of pain.

Since parents may provide valuable information about their child's pain, clinicians should routinely seek their input. However, remember that a variety of factors, including family dynamics, can influence a child's behavior. If family members value pain tolerance, children may mask expressions of pain to win approval. In other instances, they may exaggerate behaviors to gain attention. For this reason, it's always important to address discrepancies between behavioral observations and reports of pain. Unscheduled daily observations and documented observations over time may show patterns of behavior that could indicate undetected

pain or anxiety or exaggerated discomfort. Share your observations with colleagues to help you better recognize such indicators.

TRIGGERING ANALGESIA ADMINISTRATION

If clinicians are unsure whether a behavior indicates pain, and there is reason to suspect pain, an analgesic trial should be implemented.⁵ Some institutions establish thresholds that trigger the administration of analgesics to children—guidelines that are already in place (see *Pain Control*, May). Many facilities require clinicians to provide analgesia when pain ratings are greater than 3 out of 10 on the FLACC scale. Analgesic choices may include a nonopioid such as acetaminophen for moderate pain (4 out of 10 to 6 out of 10) and opioids such as morphine

for severe pain (7 out of 10 to 10 out of 10). Age-appropriate non-pharmacologic interventions are used to complement pharmacologic interventions.⁵ ▼

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