

The CRIES Scale for Neonatal Postoperative Pain Assessment

Overview: The CRIES (Crying Requires oxygen Increased vital signs Expression Sleep) scale is a tool for measuring postoperative pain in the neonate. The scale may be taken over time to monitor the infant's recovery or response to interventions. The authors are from the University of Missouri in Columbia.

Patient population:

- Neonates with study population from 32 to 60 weeks gestational age.
- The infants were in an intensive care unit following surgery and were evaluated hourly.

Parameters (see Table 2 page 55):

(1) crying: The characteristic cry of pain is high pitched.

(2) requires oxygen to keep oxygen saturation > 95%: Neonates experiencing pain show a decrease in oxygenation.

(3) increased vital signs: Vital signs are taken last since this may waken the child.

(4) expression: The facial expression most often associated with pain is the grimace. There may be brow lowering squeezing shut of the eyes deepening of the nasolabial furrow and opening of the lips and/or mouth.

(5) sleepless: Based on observation during the hour previous to recording score.

Parameter	Finding	Points
crying	no	0
	crying but not high pitched	0
	high pitched but infant consolable	1
	inconsolable	2
requires oxygen	no	0
	<= 30% supplemental oxygen required to keep oxygen saturation > 95%	1
	> 30% supplemental oxygen required to keep oxygen saturation > 95%	2
increased vital signs	heart rate and mean blood pressure less than or equal to preoperative values	0
	heart rate OR mean blood pressure increased but <= 20% from preoperative levels	1
	heart rate OR mean blood pressure increased > 20% from preoperative levels	2

expression	none	0
	grimace	1
	grimace with grunting	2
sleepless	no	0
	wakes at frequent intervals	1
	constantaly awake	2

from Table 1 page 55

where:

- supplemental oxygenation is given as < 30% or > 30% with no specification for = 30%.
- Vital signs are given as < 20% or > 20% from preoperative levels with no specification for = 20%.

CRIES score = SUM(points for all 5 parameters)

Interpretation:

- minimum score: 0
- maximum score: 10
- The higher the score the greater the subjective expression of pain.

Performance:

- The results of the CRIES scale correlate well with the OPS score (Figure 3 page 58).
- The authors found the score valid and reliable.

References:

Krechel SW Bildner J. CRIES: a new neonatal postoperative pain measurement score. Initial testing and reliability. Paediatric Aneasthesia. 1995; 5: 53-61.