

Premature Infant Pain Profile (PIPP)

Overview: The Premature Infant Pain Profile (PIPP) is a behavioral measure of pain for premature infants. It was developed at the Universities of Toronto and McGill in Canada.

Indicators:

- (1) gestational age
- (2) behavioral state before painful stimulus
- (3) change in heart rate during painful stimulus
- (4) change in oxygen saturation during painful stimulus
- (5) brow bulge during painful stimulus
- (6) eye squeeze during painful stimulus
- (7) nasolabial furrow during painful stimulus

Scoring instructions:

- (1) Score gestational age before examining infant.
- (2) Score the behavioral state before the potentially painful event by observing the infant for 15 seconds .
- (3) Record the baseline heart rate and oxygen saturation.
- (4) Observe the infant for 30 seconds immediately following the painful event. Score physiologic and facial changes seen during this time and record immediately.

Indicator	Finding	Points
gestational age	>= 36 weeks	0
	32 weeks to 35 weeks 6 days	1
	28 weeks to 31 weeks 6 days	2
	< 28 weeks	3
behavioral state	active/awake eyes open facial movements	0
	quiet/awake eyes open no facial movements	1
	active/sleep eyes closed facial movements	2
	quiet/sleep eyes closed no facial movements	3
heart rate maximum	0-4 beats per minute increase	0
	5-14 beats per minute increase	1

	15-24 beats per minute increase	2
	>= 25 beats per minute increase	3
oxygen saturation minimum	0 to 2.4% decrease	0
	2.5 to 4.9% decrease	1
	5.0 to 7.4% decrease	2
	7.5% decrease or more	3
brow bulge	none (<= 9% of time)	0
	minimum (10-39% of time)	1
	moderate (40-69% of time)	2
	maximum (>= 70% of time)	3
eye squeeze	none (<= 9% of time)	0
	minimum (10-39% of time)	1
	moderate (40-69% of time)	2
	maximum (>= 70% of time)	3
nasolabial furrow	none (<= 9% of time)	0
	minimum (10-39% of time)	1
	moderate (40-69% of time)	2
	maximum (>= 70% of time)	3

premature infant pain profile = SUM(points for all 7 indicators)

Interpretation:

- minimum score: 0
- maximum score: 21
- The higher the score the greater the pain behavior.

References:

Stevens B Johnston C et al. Premature Infant Pain Profile: Development and initial validation. Clinical Journal of Pain. 1996; 12: 13-22