

Establishment Of Inter-observer Reliability Using The Finnegan Neonatal Abstinence Scoring Tool

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Objectives

- Discuss the importance of attaining reliability with clinical screening tools.
- Define the items that made up the Finnegan Neonatal Abstinence Scoring Tool.
- Describe how to determine your inter-observer reliability with the Finnegan Scoring Tool.

Objectives

- List two factors that are associated with comprehensive management of drug-exposed infants.

Neonatal Abstinence Syndrome

- Generalized disorder with symptoms of withdrawal in the neonate.
- Occurs from both licit and illicit opioid substances.
- Exposure can occur in utero or iatrogenically.



National Survey on Drug Use & Health, 2006

Neonatal Abstinence Syndrome

- Often associated with polydrug use.
- 160,000 of all live births in US are born to women who use illicit drugs during pregnancy.
- 55% to 95% of newborns exposed to opiates during pregnancy will have withdrawal signs & symptoms.



Neonatal Abstinence Syndrome

- Withdrawal can be severe if not accurately assessed and treated.
- It is essential to assess for neonatal abstinence with accuracy.

Finnegan Scoring Tool

- Most comprehensive tool available to assess signs & symptoms of opiate withdrawal in the neonate.
- Contains 21 signs & symptoms of withdrawal.
- Identified from review of literature and 200 clinical observations.

Finnegan Scoring Tool

Signs & Symptoms divided into 3 system

Categories:

- 1) Central nervous system disturbances
- 2) Metabolic, vasomotor, and respiratory disturbances
- 3) Gastrointestinal disturbances

Central Nervous System Disturbances

- Excessive or continuous crying that may or may not be high-pitched.
- Sleep disturbances
- Hyperactive Moro reflex
- Tremors: Disturbed and/or Undisturbed



Central Nervous System Disturbances

- Excoriation
- Increased muscle tone
- Generalized convulsions



Metabolic, Vasomotor & Respiratory Disturbances

- Frequent Yawning
- Sweating
- Fever
- Mottling



Metabolic, Vasomotor & Respiratory Disturbances

- Sneezing
- Nasal Stuffiness
- Nasal Flaring
- Increased Respiratory Rate w/o Retractions



Gastrointestinal Disturbances

- Excessive Sucking
- Poor Feeding
- Regurgitation
- Projectile Vomiting
- Loose or Watery Stools



Finnegan Neonatal Abstinence Scoring Tool (FNAST)

Patient ID: _____ Name: _____ Today's Weight: _____ DOB: _____ Date: _____

Signs & Symptoms	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Comments	
Central Nervous System Disturbances																											
Crying: Excessive High Pitched																											
Crying: Cont. High Pitched																											
Sleeps < 1 Hr After Feeding																											
Sleeps < 2 Hr After Feeding																											
Sleeps < 3 Hr After Feeding																											
Hyperactive Moro Reflex																											
Markedly Hyperactive Moro Reflex																											
Mild Tremors; Disturbed																											
Mod-Severe Tremors; Disturbed																											
Mild Tremors; Undisturbed																											
Mod-Severe Tremors Undisturbed																											
Increased Muscle Tone																											
Excitation (Specific Area)																											
Myoclonic Jerk																											
Generalized Convulsions																											
Metabolic, Vasomotor And Respiratory Disturbance																											
Sweating																											
Fever < 101 (37.2-38.3c)																											
Fever > 101 (38.4c)																											
Frequent Yawning (> 3)																											
Mottling																											
Nasal Stuffiness																											
Sneezing (>3)																											
Nasal Flaring																											
Respiratory Rate (> 60/Min)																											
Respiratory Rate (>60/Min With Retractions)																											
Gastrointestinal Disturbances																											
Excessive Sucking																											
Poor Feeding																											
Regurgitation																											
Projectile Vomiting																											
Loose Stools																											
Watery Stools																											
Total Score																											
Average Daily Score																											
Inter-Observer Reliability %																											
Width of Score 1																											
Width of Score 2																											

Central Nervous System Disturbances	1	2	3	4	5
Crying: Excessive High Pitched					
Crying: Cont. High Pitched					
Sleeps < 1 Hr After Feeding					
Sleeps < 2 Hr After Feeding					
Sleeps < 3 Hr After Feeding					
Hyperactive Moro Reflex					
Markedly Hyperactive Moro Reflex					
Mild Tremors; Disturbed					
Mod-Severe Tremors; Disturbed					
Mild Tremors; Undisturbed					
Mod-Severe Tremors Undisturbed					
Increased Muscle Tone					
Excitation (Specific Area)					
Myoclonic Jerk					
Generalized Convulsions					

Metabolic, Vasomotor And Respiratory Disturbance	1	2	3	4	5
Sweating					
Fever < 101 (37.2-38.3c)					
Fever > 101 (38.4c)					
Frequent Yawning (> 3)					
Mottling					
Nasal Stuffiness					
Sneezing (>3)					
Nasal Flaring					
Respiratory Rate (> 60/Min)					
Respiratory Rate (>60/Min With Retractions)					

Gastrointestinal Disturbances	1	2	3	4	5
Excessive Sucking					
Poor Feeding					
Regurgitation					
Projectile Vomiting					
Loose Stools					
Watery Stools					

Scoring Frequency

- Let the baby transition
- Then, Q 3-4 hrs
- Keep on same schedule
- Score before feeding

Scoring Frequency

- If no treatment required by 72 hrs scoring can be discontinued & discharged after 24 hrs



Important Point

- Scoring is dynamic and not static
- Signs & Symptoms present within the 3-4 hr scoring interval need to be scored when it is time for the scoring

Yawning & Sneezing Record

Sneeze		Yawn		Comments
Time AM PM	Observer	Time AM PM	Observer	

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Sleeping Record

Feeding			Time Fell Asleep		Time Awake	
Time AM PM	Observer	Time AM PM	Observer	Time AM PM	Observer	

D'Apolito, Copyright, 2010

Problems Using Scoring Tool

- Inconsistency regarding scoring intervals and feeding schedule.
 - Example: Babies awakened after a feeding to be scored.
- Inconsistence between staff with scoring.

Problems Using Scoring Tool

- Inconsistency with defining the signs & symptoms of withdrawal.
 - Example: How do you differentiate between mild, moderate and severe tremors?
 - Example: How do you differentiate between a hyperactive and a markedly hyperactive Moro reflex?

Development of Inter-Observer Reliability Program

- *Designed to add consistency to scoring*
- *Development of item definitions*
- *Example: Excessive Crying*
- *How would you score this item?*

Scoring Excessive Crying

Definition:

Infant unable to ↓ crying within 15 sec using self-consoling measures or continues to cry for up to 5 minutes despite caregiver interventions –

Score 2

if unable to self console in 15 sec or continuous >5 min despite intervention – Score 3



Scoring Sleep

- Based on longest period of sleep light or deep after feeding.
- Score 3 if <1 hour
- Score 2 if <2 hours
- Score 1 if <3 hours



Moro Reflex

- Hyperactive-jitteriness that is rhythmic, symmetrical, and involuntary – Score 2
- Markedly Hyperactive – jitteriness as above with hand clonus (more than 8-10 beats) – Score 3



Tremors

- Mild - involuntary, rhythmic movement of the hands and/or feet – Score 1
- Moderate – Severe - involuntary, rhythmic movement of the arm or legs – Score 2
- Tremors need to be examined when the baby is disturbed and undisturbed.
- If Mild when undisturbed – Score 3
- If Moderate-Severe – Score 4

Increased Muscle Tone

- No head lag with total body rigidity - Score 2

Note: Do not test while asleep or crying



Excoriation

- If present at nose, chin, cheeks, elbows, knees, or toes – Score 1
- Do not score for diaper area if related to loose or frequent stools.



Myoclonic Jerks

- Involuntary muscle twitching face/ extremities or jerking at extremities (more pronounced than jitteriness of tremors)

Score 3

Yawning & Sneezing

- If yawns >3 times within interval – Score 1
- If sneezes > 3 times within Interval – Score 1



Excessive Sucking & Poor Feeding

- Excessive Sucking - Vigorous rooting with attempts to suck fist, hand, or pacifier before or after feeding.
- Score 1 for >3 attempts noted
- Poor Feeding - excessive sucking as above but infrequent or uncoordinated with feeding. Gulping with frequent rest periods to breath – Score 2

Stools

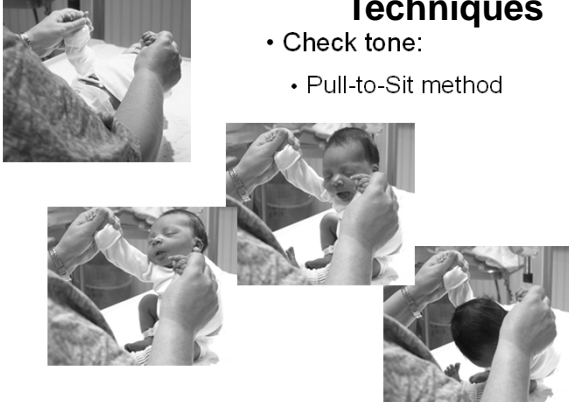
- Loose - curdy, seedy, or liquid without water ring – Score 2
- Watery - liquid/hard with water ring – Score 3
- Note: If baby is having loose/watery stools a red buttocks may be present

Development of Inter-Observer Reliability Program

- Description of the techniques required to assess an infant for S/S of withdrawal.
- Participant establishes reliability using a video of an infant being assessed for withdrawal.


Techniques

- Check tone:
 - Pull-to-Sit method



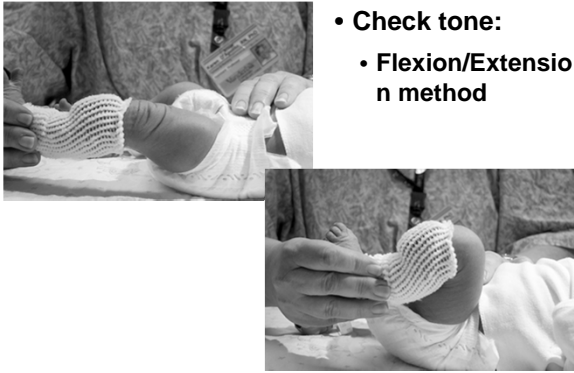
Techniques

- Check tone:
 - Upright Suspension method




Techniques

- Check tone:
 - Flexion/Extension method



Techniques

Moro Reflex

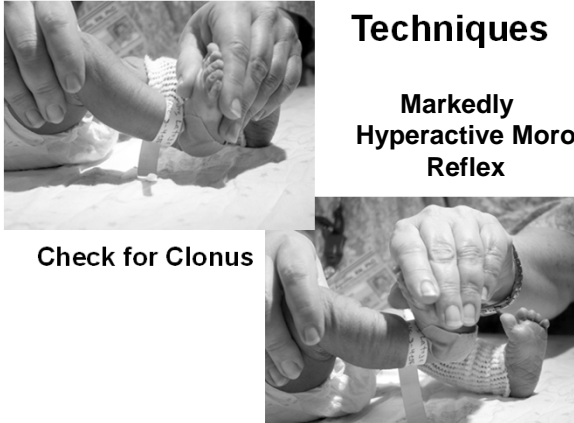


Hyperactive

Techniques

Markedly Hyperactive Moro Reflex

Check for Clonus



Sequence of Events

- 1) Become familiar with the tool
- 2) Learn the item definitions
- 3) Learn techniques of exam
- 4) Test your inter-observer reliability
 - One nurse examines the baby while the other nurse watches

Sequence of Events

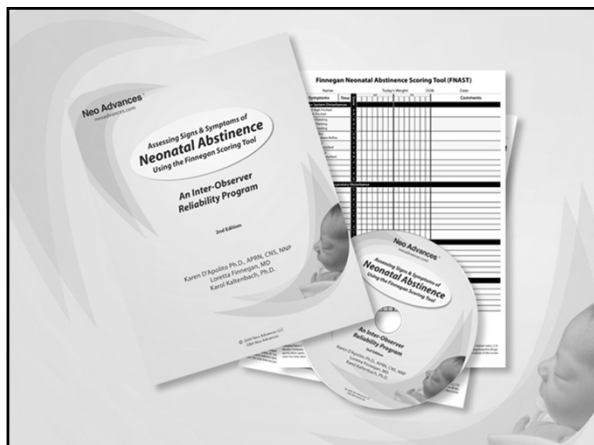
- Then both nurses score baby independently
- Then check inter-observer reliability
- Look for agreements
- Then determine your inter-observer reliability



Inter-Observer Reliability Agreement Chart

Total Number of Items of Agreement	Total Number of Items of Disagreement	Percentage Score
21	0	100%
20	1	95%
19	2	90%
18	3	85%
17	4	80%

Attain 90% inter-observer reliability



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Questions?