



Pharmacologic Treatment Recommendations for NAS

Benzodiazepine (Isolated Exposure)

	Score	Initial Dose	Route	Maintenance Dosing	Comments
Phenobarbital	Should be initiated if patient has a high NAS score	20 mg/kg	PO	3 mg/kg/dose every 24 hours. Start maintenance 24 hours after loading dose.	Consider starting morphine if scores remain high 24 hours after observation and consult with pharmacist.

Opioid/Unknown/Poly

Morphine	When pharmacologic treatment begins, patient will be started on scheduled dosing, no prns will be used <ul style="list-style-type: none"> - Start morphine if Score of 24 Rule is met. - Start course based on highest score in the last 24 hours. 				
Initial Dose	Score	Frequency/Route: Ordered every 3 hours* PO**			
	8-10	0.05 mg/kg/dose ORALLY = 0.025 mg/kg IV			
	11-13	0.08 mg/kg/dose ORALLY = 0.04 mg/kg IV			
	14-16	0.11 mg/kg/dose ORALLY = 0.055 mg/kg IV			
	>16	0.17 mg/kg/dose ORALLY = 0.085 mg/kg IV			
Morphine Dose Escalation	If Score of 24 Rule is met after initiation, increase dose by 20%. Dose may continue to be increased by 20% every 12 hours (3-4 doses) if Score of 24 Rule is met.				

*Nurse may give dose every 3-4 hours based on feeding schedule

** IV morphine dose is ½ the oral morphine dose

- Allow infant to stabilize 24 hours on a dose that controls symptoms prior to initiation of weaning.
- If symptoms are not controlled on a total daily dose > 1 mg/kg/day, consider adding a second line medication (clonidine).

Second Line Medication

- If patient requires more than 1 mg/kg/day of morphine, add second line medication
- May also be started when tapering if conditions under “Weaning Pharmacologic Treatment” are met
- After starting second line medication, allow infant to stabilize for 24 hours. If Score of 24 Rule is met, continue to gradually increase morphine dose as outlined in titration schedule.

	Initial Dose	Route	Maintenance Dosing	Comments
Clonidine	1 mcg/kg/dose every 6 hours	PO	Max dose 1 mcg/kg/dose every 3 hours	Clonidine suspension = 20 mcg/mL

				Typical dose range: 0.5 to 1 mcg/kg/dose every 3 to 6 hours
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Weaning Pharmacologic Treatment

- “Stable NAS score” is defined as all NAS scores < 8 in the preceding 24 hours
- Allow 24 hours between medication weans to assess tolerance.
- Do not change morphine interval during wean (maintain every 3 hour interval)
- After discontinuing morphine, continue to perform NAS scoring every 3-4 hours with feeds. If Score of 24 Rule is met, resume scheduled morphine at the most recently discontinued dose.
- Patient may be discharged when scheduled therapy is discontinued and all NAS scores are < 8 for at least 48 hours.

Morphine Only	<p>When NAS scores are stable, IF doses are: < 0.1 mg/kg/dose then wean dose by 20%** ≥ 0.1 mg/kg/dose then wean dose by 10%**</p> <p>-Allow 24 hours between morphine weans; Consult pharmacist after 2 dose changes</p> <p>When morphine dose reaches 0.02 mg/kg/dose every 3 hours, change frequency to every 6 hours</p> <p>Discontinue morphine when infant has tolerated a dose of 0.02 mg/kg/dose every 6 hours for 24-48 hours.</p> <p>Consider addition of clonidine if:</p> <ul style="list-style-type: none"> - Morphine dose has not been weaned for 2-3 days due to NAS scores - Infant has failed discontinuation of morphine therapy <ul style="list-style-type: none"> o Restart morphine at 0.02 mg/kg/dose PO every 3 hours with clonidine
Morphine and Clonidine	<p>When NAS scores are stable, IF doses are: < 0.1 mg/kg/dose then wean dose by 20% ≥ 0.1 mg/kg/dose then wean dose by 10%</p> <p>-Allow 24-48 hours between morphine weans; Consult pharmacist after 2 dose changes</p> <p>Discontinue morphine when infant has tolerated a dose of 0.02 mg/kg/dose every 3 hours for 24-48 hours.</p> <p>After morphine is discontinued, start decreasing clonidine by 25% when all NAS scores are < 8 for at least 24 hours. Discontinue clonidine at a dose of 0.25 mcg/kg/dose</p>

** Percent is calculated from the original morphine dose at the start of weaning

References:

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