 [BETA](#gjdgxs)

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* [FEEDBACK-SURVEY](https://docs.google.com/forms/d/e/1FAIpQLScbGN0_aSKJZyTYNbTVZYY_cR1RKVONU2nZGkinmj8oXqQJlg/viewform?usp=sf_link)

This tool is intended to promote **identification and early referral** of babies at risk for hypoxic ischemic encephalopathy (HIE). **It does not determine if a baby should be cooled.** The decision to proceed with cooling should only be made after consultation with a Regional Cooling Center (ref.  [CCS numbered letter](http://docs.google.com/content/ccs_letter.pdf)), based upon their institutional criteria. These recommendations are based on the HIE [early screening toolkit](https://www.cpqcc.org/qi-tool-kits/early-screening-and-identification-candidates-neonatal-therapeutic-hypothermia-toolkit)  published by the  [California Perinatal Quality Care Collaborative (CPQCC)](https://www.cpqcc.org/)

Enter details below

Gestational Age >= 35wks \*



Yes No unknown

Age in Hours \*



Acute Perinatal Events



Unknown Placental Abruption Cord Prolapse Uterine Rupture Severe Fetal Bradycardia Amniotic Embolus Maternal Cardiovascular Collapse Fetal Exsanguination None of the above

Apgar @10min



Worst Cord Blood Gas



Infant Blood Gas within 1hr of life



CPR/Epinephrine



Unknown CPR Epinephrine Both None

Continued need for assisted ventilation at 10 mins of life.



Yes No unknown

Recommendations

### Neonatal Neuro Tool

Back

* **SCREENING CRITERIA NOT MET**  
  Current evidence does not support the initiation of cooling therapy in infants <35 weeks GA.[*Learn More.*](http://docs.google.com/content/cooling_criteria.png)  
    
  **Note:** Contact [Cooling Center](#gjdgxs) to discuss any possible qualifying exceptions or special circumstances for cooling. Recommend performing  [Neurological Assessment](http://docs.google.com/content/Template-Questionnaire.pdf) prior to the consultation.  
    
  **Ongoing trials for cooling in infants with GA 33 0/7 to 35 6/7:**  
  Preemie Hypothermia for Neonatal encephalopathy (NCT01793129)  
  Contact: Stanford University  
  Palo Alto, California, United States, 94304  
  Contact: Krisa P. Van Meurs, MD: xxx-xx-xxxx
* **SCREENING CRITERIA NOT MET**[*Learn Why.*](http://docs.google.com/content/cooling_criteria.png)  
  Current evidence does not support the initiation of cooling therapy beyond 6 hours of life.
* However, infant has risk factors for Neonatal Encephalopathy. Recommend  [Neurological assessment](http://docs.google.com/content/Template-Questionnaire.pdf) and clinical correlation.
* **Note:** Infant may have met criteria if age were <=6hr. [Contact Cooling Center](#gjdgxs) to discuss any possible qualifying exceptions or special circumstances for cooling. Recommend performing  [Neurological Assessment](http://docs.google.com/content/Template-Questionnaire.pdf) prior to the consultation.
* **SCREENING CRITERIA NOT MET**[*Learn Why.*](http://docs.google.com/content/cooling_criteria.png)  
  Recommend clinical correlation. Continue care as appropriate.



* **AT RISK; Perform further screening steps.**
* **Based on INCOMPLETE information, SCREENING CRITERIA NOT MET.**

**Suggested Actions:**

1. If possible, gather missing birth and resuscitation history
2. Request umbilical cord gas, if availble
3. Request umbilical cord gas, if availble, OR  
   Consider obtaining infant blood gas
4. Consider obtaining infant blood gas
5. Consider obtaining infant blood gas, if validity of cord gas result is uncertain  
   (prolonged flow arrest/complete knots)
6. Perform neurologic assessment after resuscitation.  
   Use or print form
7. *Refer the table below for suggested action after the neurologic assessment.*  
   *For Cooling, consider the* ***worst exam*** *after initial resuscitation*

|  |  |
| --- | --- |
| 1. Neurologic Assessment Result | 1. Clinical Suggestions |
| 1. Normal | 1. Screens negative at ***this*** time. Symptoms may change. **Continue to monitor** as per [CPQCC guidelines](http://docs.google.com/content/AppendixE_doNotQualify.pdf). |
| 1. Mild | 1. Call cooling center to discuss case. Provide care as per the management guidelines  [for potential candidates](http://docs.google.com/content/AppendixX_potentialCandiadtes.pdf) |
| 1. Moderate to Severe | 1. Call cooling center to discuss the need for transfer and cooling. Provide care as per the management guidelines  [for potential candidates](http://docs.google.com/content/AppendixX_potentialCandiadtes.pdf) |
| 1. Incomplete Exam | 1. Call cooling center to discuss case immediately. |

If directed to cool, see protocols: Choose a protocol: Management of Cooling Candidate Passive Cooling Protocol Tip Sheet Flow Sheet

Time of life at neuro exam:

Hr Min

**Seizures:**

No known episode EEG Confirmed Suspected/Clinical

|  |
| --- |
| **\*\* Click to select characteristics for each row in the table below** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level of Conciousness | Normal  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-level-consciousness-normal) | Irritable/Hyperalert | Lethargic/Obtunded  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-level-consciousness-video-moderate) | Stupor/Unresponsive | Cannot Assess |
| Spontaneous Activity | Normal  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-spontaneous-activity-video-normal) | Jittery/Increased  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-spontaneous-activity-mild) | Decreased | No Activity  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-spontaneous-activity-video-severe) | Cannot Assess |
| Posture | Normal  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-posture-video-normal) | Slight flexion/extension  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-posture-video-mild) | Distal Flexion/Complete Extension  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-posture-video-moderate) | Decerebrate | Cannot Assess |
| Tone | Normal  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-tone-video-normal) | Normal/Increased  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-tone-video-mild) | Hypotonic  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-tone-moderate) | Flaccid  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-tone-video-severe) | Cannot Assess |
| Suck | Normal  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-primitive-reflexes-suck-video-normal) | Uncoordinated | Weak  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-primitive-reflexes-suck-moderate) | Absent  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-primitive-reflexes-suck-video-severe) | Cannot Assess |
| Moro | Normal  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-primitive-reflexes-moro-video-normal) | Exagerated | Incomplete | Absent | Cannot Assess |
| Gag | Normal | | Absent | | Cannot Assess |

#### ×

Modal Header

Some text in the modal.

Close

Conciousness

Activity

Posture

Tone

Reflexes

Question 1 of 5 - Assess Level of Consciousness

**Normal** - opens eyes and moves with repeated tactile stimulation; appropriately wakes and falls

back to sleep.  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-level-consciousness-normal)

**Mild** - Irritable, hyperalert and/or agitated, maintains awake state, may have high pitched cry

**Moderate** - Reduced eye opening and movements to tactile stimulation.  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-level-consciousness-video-moderate)

**Severe** - Baby is unresponsive on only responds to painful stimuli, responses are stereotyped

**Cannot Assess**

Question 2 of 5 - Assess Activity

**Normal** - spontaneous movements  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-spontaneous-activity-video-normal)

**Mild** - excess movements, jittery, agitated.  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-spontaneous-activity-mild)

**Moderate** - decreased spontaneous movements, may respond to pain/touch

**Severe** - no spontaneous movements.  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-spontaneous-activity-video-severe)

**Cannot Assess**

Question 3 of 5 - Assess Posture

**Normal**  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-posture-video-normal)

**Mild** - Slight flexion/extension  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-posture-video-mild)

**Moderate** - Distal Flexion/Complete Extension [See video](https://people.stanford.edu/wusthoff/neurologic-exam-posture-video-moderate)

**Severe** -Decerebrate

**Cannot Assess**

Question 4 of 5 - Assess Tone

**Normal** - flexed posture of arms and legs that is not fixed.  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-tone-video-normal)

**Mild** - mild excess fisting, high tone in the legs (hypertonia).  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-tone-video-mild)

**Moderate** - frog-legged and/or excess head lag (hypotonia).  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-tone-video-moderate)

**Severe** - flaccid (ie extreme hypotonia).  [See video](https://people.stanford.edu/wusthoff/neurologic-exam-tone-video-severe)

**Cannot Assess**

Question 5 of 5 - Assess Reflexes

**Suck** Strong Coordinated suck [(See video)](https://people.stanford.edu/wusthoff/neurologic-exam-primitive-reflexes-suck-video-normal)

Uncoordinated

Weak, uncoordinated or infant bites instead of sucking [(See video)](https://people.stanford.edu/wusthoff/neurologic-exam-primitive-reflexes-suck-moderate)

Absent [(See video)](https://people.stanford.edu/wusthoff/neurologic-exam-primitive-reflexes-suck-severe)

Cannot Assess

**Gag** Normal Absent

Cannot Assess

**Moro** Normal [(See video)](https://people.stanford.edu/wusthoff/neurologic-exam-primitive-reflexes-moro-video-normal)  Exaggerated Incomplete Absent

Cannot Assess

**Likely severity:**

**Unable to access**

WORK IN PROGRESS

[Algorithm used by Cool Tool](http://docs.google.com/content/cooling_criteria.png)

[Early Screening and Identification of Candidates for Neonatal Therapeutic Hypothermia Toolkit](https://www.cpqcc.org/qi-tool-kits/early-screening-and-identification-candidates-neonatal-therapeutic-hypothermia-toolkit)

[FAQ for Parents](http://docs.google.com/content/parentFAQ.pdf)

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