

MassGeneral Hospital *for* Children
Pediatric Intensive Care Unit
The COMFORT Scale

Introduction: Sedatives administered to patients in the pediatric intensive care unit are to diminish agitation, relieve anxiety and promote synchrony with the ventilator. Until recently, there was no objective measurement to determine if a patient was receiving either insufficient or excessive sedation. Measuring the level of sedation in critically ill patients is challenging. The goal of using a sedation scale is to facilitate the early recognition of progression to over-sedation

COMFORT Scale: The COMFORT Scale was developed at the Medical College of Wisconsin for children 0-18 years of age in the pediatric intensive care unit, who were not muscle relaxed. Using both behavioral and physiological items the scale consists of eight dimensions, which allow for nonintrusive measurement of distress in PICU patients. Each of the eight dimensions has five response categories (1 to 5), allowing assessment of subtle changes. Ambuel et al, tested validity (1992) and found that interrater agreement and internal consistency were high.

Dimensions: Alertness, Calmness or agitation, Respiratory response, Physical movement, Blood pressure, Heart rate, Muscle tone, Facial tension

Measurement: The COMFORT scale is composed of six behavioral dimensions (alertness, calmness, muscle tone, movement, facial tension and respiratory response) and two physiological dimensions (heart rate and mean arterial pressure). Each dimension is rated individually with a score from 1 to 5. The level of sedation is obtained by adding all eight-dimension scores together (see scoring sheet).

Level of sedation: 8 to 16 points indicates deep sedation
17 to 26 points indicates optimal sedation
27 to 40 points indicates inadequate sedation

Documentation: Using the COMFORT scale, sedated patients will be assessed every four (4) hours for their level of sedation. The total COMFORT score will be documented in the sedation column on the flowsheet.

The COMFORT Scoring System

	1	2	3	4	5
Alertness	Deeply asleep	Lightly asleep	Drowsy	Fully awake and alert	Hyper-alert
Calmness or agitation	Calm	Slightly anxious	Anxious	Very anxious	Panicky
Respiratory response	No coughing and no spontaneous respirations	Spontaneous respiration with little or no response to ventilation	Occasional cough or resistance to ventilator	Actively breathes against ventilator or coughs regularly	Fights ventilator; coughing or choking
Physical movement	No movement	Occasional, slight movement	Frequent slight movement	Vigorous movement limited to extremities	Vigorous movement including torso and head
Blood pressure	BP below baseline	BP consistently at baseline	Infrequent elevations of 15% or more (1 to 3 episodes during observation period)	Frequent elevations of 15% or more (more than 3 episodes)	Sustained elevation >15%
Heart rate	HR below baseline	HR consistently at baseline	Infrequent elevations of 15% or more (1 to 3 episodes during observation period)	Frequent elevations of 15% or more (more than 3 episodes)	Sustained elevation >15%
Muscle tone	Muscles totally relaxed; no muscle tone	Reduced muscle tone	Normal muscle tone	Increased muscle tone and flexion of fingers and toes	Extreme muscle rigidity and flexion of fingers and toes
Facial tension	Facial muscles totally relaxed	Facial muscle tone normal; no facial muscle tension evident	Tension evident in some facial muscles	Tension evident throughout facial muscles	Facial muscles contorted and grimacing

COMFORT Scale – Scoring Sheet		Time:						
ALERTNESS								
Deeply asleep	1							
Lightly asleep	2							
Drowsy	3							
Fully awake and alert	4							
Hyper-alert	5							
CALMNESS/AGITATION								
Calm	1							
Slightly anxious	2							
Anxious	3							
Very anxious	4							
Panicky	5							
RESPIRATORY RESPONSE								
No coughing and no spontaneous respiration	1							
Spontaneous respiration with little or no response to ventilation	2							
Occasional cough or resistance to ventilator	3							
Actively breathes against ventilator or coughs regularly	4							
Fights ventilator; coughing or choking	5							
PHYSICAL MOVEMENT								
No movement	1							
Occasional, slight movement	2							
Frequent, slight movement	3							
Vigorous movement limited to extremities	4							
Vigorous movements including torso and head	5							
BLOOD PRESSURE (MAP) BASELINE _____								
Blood pressure below baseline	1							
Blood pressure consistently at baseline	2							
Infrequent elevations of 15% or more above (1 to 3)	3							
Frequent elevations of 15% or more (more than 3)	4							
Sustained elevations >15%	5							
HEART RATE BASELINE _____								
Heart rate below baseline	1							
Heart rate consistently at baseline	2							
Infrequent elevations or 15% or more above baseline (1 to 3 times) during observation period	3							
Frequent elevations of 15% or more above baseline (more than 3 times)	4							
Sustained elevation of >15%	5							
MUSCLE TONE								
Muscles totally relaxed; no muscle tone	1							
Reduced muscle tone	2							
Normal muscle tone	3							
Increased muscle tone & flexion of fingers and toes	4							
Extreme muscle rigidity & flexion of fingers and toes	5							
FACIAL TENSION								
Facial muscles totally relaxed	1							
Facial muscle tone normal; no facial muscle tension evident	2							
Tension evident in some facial muscles	3							
Tension evident throughout facial muscles	4							
Facial muscles contorted and grimacing	5							

TOTAL COMFORT SCORE