

# Mindful Meditation is a safe, tolerable, nonpharmacologic intervention to help reduce stress in critically ill children.

## Use of Mindful Meditation in Critically Ill Children: A Pilot Feasibility Study

### BACKGROUND

- Critically ill children, particularly those in respiratory failure, are at high risk of developing severe **psychological distress** and **delirium**.
- Mindful Meditation is a nonpharmacologic intervention known for stress reduction that **may benefit** pediatric patients in respiratory failure from critical illness.

### METHODS

1. N = 50 patients undergoing 125 meditation events lasting 5-7 minutes each.
2. At the beginning, middle, and end of each mediation, we recorded the following vital signs: heart rate, respiratory rate, mean arterial pressure and cerebral NIRS (near infrared spectroscopy).
3. We surveyed patients, parents, and nurses on their perception of the mediation experience.
4. Funding provided by the Bucksbaum Foundation.

### RESULTS

- A chronologic reduction of physiologic measures of stress was seen during meditation events:
  - Average HR decrease of 4.3% halfway & 7.2% at end.
  - Average RR decrease of 11% halfway & 19.4% at end.
- 87% of patients (n = 41) reported meditations made them feel less scared and 62% of patients (n = 29) reported feeling less pain during the meditation.
- RNs felt these exercises were useful to their patients 100% of the time.
- 100% of parents felt that the events neither interfered with medical care nor disturbed their child.
- **No adverse events** were reported.

### CONCLUSIONS

- Mindful meditation is feasible, well-tolerated, and safe for critically ill pediatric patients with respiratory failure.
- This intervention could potentially decrease not only psychologic but also physiologic distress.

**Table 1: Patient and Event Characteristics**

Patient Characteristics (n=50)	n (%)
Female sex	26 (52%)
Age in years, median	5-17, 10
Race	
Caucasian	3 (6%)
Hispanic/Latin American	2 (4%)
African American	45 (90%)
Asian/Pacific Islander/Native American	0 (0%)
Respiratory failure etiology	
Asthma	44 (88%)
Sepsis/ARDS*	3 (6%)
Traumatic Brain Injury	2 (4%)
Post-operative	1(2%)
Meditation Event Characteristics (n=124)	n (%)
Respiratory Support	
Oral intubation	25 (19%)
BIPAP <sup>†</sup>	70 (57%)
HFNC <sup>‡</sup>	29 (24%)

\*ARDS, acute respiratory distress syndrome. <sup>†</sup>Bipap, bilevel positive airway pressure. <sup>‡</sup>HFNC, high flow nasal cannula.



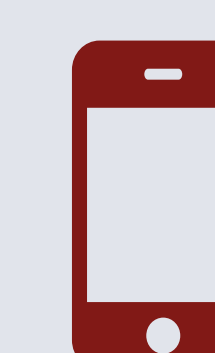
Audio for Mindfulness Meditations provided by Sylvia Ewing—without whom this project would not have been possible. Read more about her incredible work at [www.sylviaewing.com](http://www.sylviaewing.com).

**Table 2: Percent Change in Vital Signs, During Intervention**

Variable	N	Mean %	Std Dev	Minimum	Maximum
Heart rate, 3 min	124	-4.3	3.6	-16.8	6.6
Heart rate, end	124	-7.2	5.2	-26.3	5.9
Respiratory rate, 3 min	124	-11.1	11.9	-54.5	33.3
Respiratory rate, end	124	-19.4	17.6	-63.6	77.8
MAP*, 3 min	30	-3.9	6.7	-15.5	17.0
MAP, end	30	-6.0	9.9	-22.0	20.8
Cerebral nirs <sup>‡</sup> , end	25	7.3	7.6	-7.0	25.9

\*MAP, mean arterial pressure. <sup>‡</sup>NIRS, near infrared spectroscopy.

**Neelima Marupudi, MD;** Emanuel Grant, MD; Sarah Hoehn, MD, MBe. Authors have no financial relationships to disclose.



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