

# ROX Index

What is the ROX index?

$$\frac{\text{SpO}_2 / \text{FiO}_2}{\text{Respiratory Rate}} = \text{ROX index}$$



**Example at 6 hours**

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SpO<sub>2</sub> = 88%

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FiO<sub>2</sub> = .70

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RR = 28 breaths/minute

$$\frac{88 / .70}{28} = 4.48$$

\*\*Flow rate of 50LPM

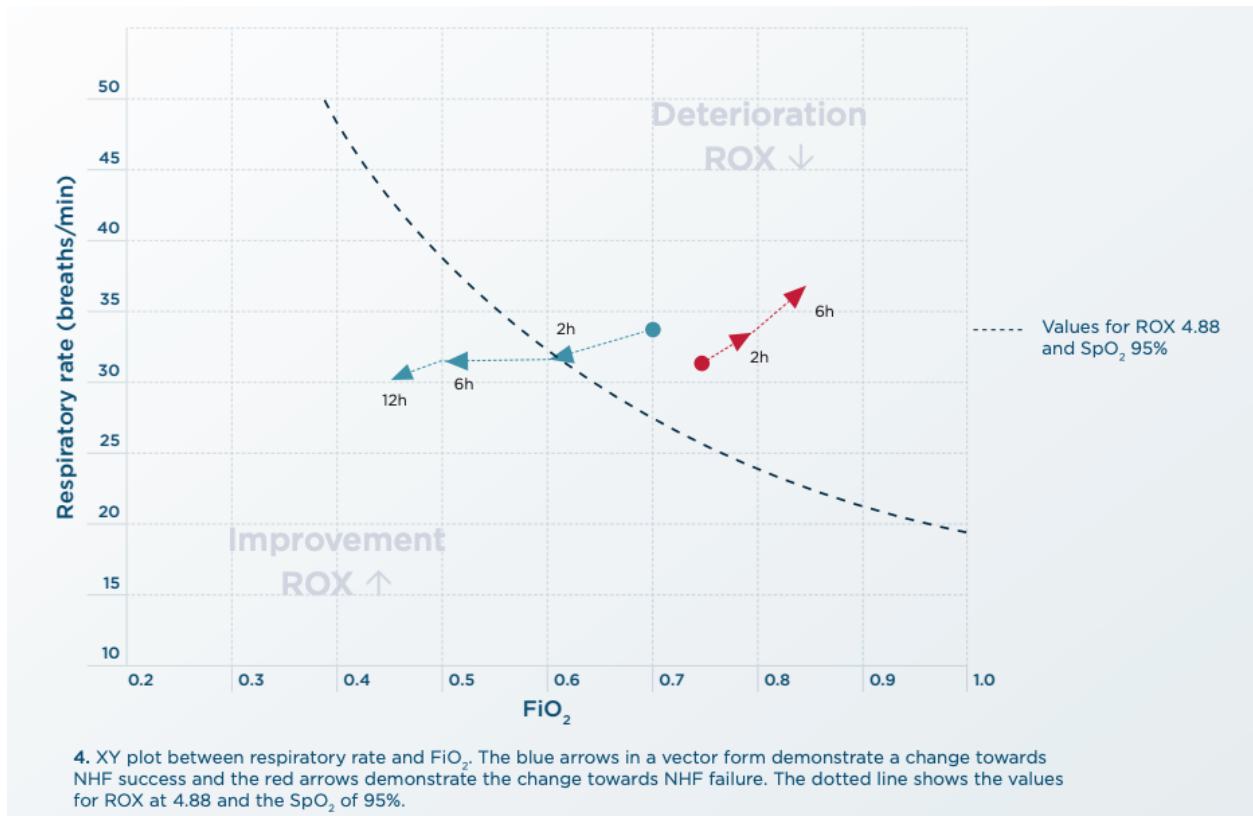
How is the ROX index interpreted?

A ROX index  $\geq 4.48$  predicts NHFC success. Lower values are associated with HFNC failure. Intermediate values may be used to stratify at-risk groups.

ROX	
$\geq 4.88$	Little risk of intubation
3.85-4.87	close monitoring due to increased risk of intubation
2.85-3.84	Monitoring in the ICU if possible. Highly increased risk of intubation
$< 2.85$	Consider intubation

Figure 3. ROX-Score for evaluation of oxygen treatment of type 1 respiratory failure, treated with High-Flow treatment.

Watching the ROX value change over time can indicate a trend toward HFNC success or failure.



References:

- EUROPEAN CLINICAL RESPIRATORY JOURNAL 2020, VOL. 7, 1761677
- <https://www.fphcare.com/us/hospital/adult-respiratory/optiflow/>
- American Journal of Respiratory and Critical Care Medicine Volume 199 Number 11, 1368-1376