

# How to interpret an acute increase in ventilatory demand?

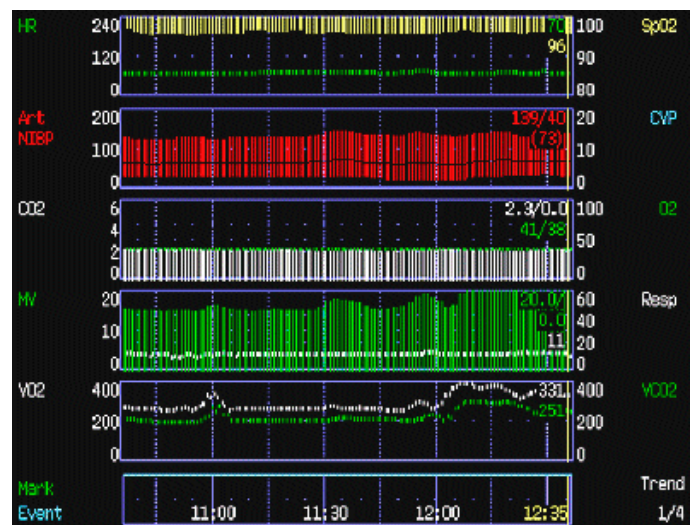
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## Case history

An elderly male patient was admitted to intensive care due to acute respiratory failure related to postoperative peritonitis and sepsis. He was intubated and mechanically ventilated on assist/control mode of ventilation.

## Case report

On the second day of intensive care, at 12:10 AM the patient had an acute increase in minute ventilation from 15 l/min to more than 20 l/min, while his end-tidal CO<sub>2</sub> and arterial oxygen saturation (pulse oximetry) remained stable. Physical examination did not reveal any relevant changes, except an acutely increased ventilatory drive, and arterial blood gas analysis confirmed unchanged PaO<sub>2</sub> and PaCO<sub>2</sub>. The CO<sub>2</sub>-production had acutely increased from approximately 200 ml/min to more than 300 ml/min. This increase, related to an acute onset of bacteremia was the sole cause of the increase in ventilatory demand. The onset of sepsis may also worsen lung function and increase ventilatory demand also by increasing the VD/VT but an unchanged end-tidal to arterial CO<sub>2</sub>-ratio effectively excludes this possibility.



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