Respiratory compromise during procedural sedation and analgesia (PSA) is:
- Frequent
- Associated with additional cost
That’s not good for patients — or healthcare providers.
But capnography monitoring may help — improving patient safety during PSA by reducing the rate of sedation-related adverse respiratory events.

PSA patients are at higher risk for adverse respiratory events

<table>
<thead>
<tr>
<th>Event</th>
<th>Odds of event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prolonged apnea</td>
<td>1/3</td>
</tr>
<tr>
<td>Mild desaturation</td>
<td>45%</td>
</tr>
</tbody>
</table>

Mean cost of adverse respiratory events:

- Prolonged apnea: $394
- Mild desaturation: $463
- Severe desaturation: $529

Monitoring SpO2 alone may delay or fail to detect abnormal ventilation

1 out of 4 PSA patients who require bag mask valve ventilation have no drop in SpO2.

90-second delay in recognizing apnea with standard monitoring in patients receiving supplemental oxygen.

Only 38% of hypoventilation or apnea episodes are detected by SpO2.

> 1/3 of non-OR anesthesia closed claims judged preventable with better monitoring.

Capnography monitoring may improve patient safety

For randomly selected GI patients undergoing propofol PSA, capnography monitoring resulted in:

- 26.88% decrease in oxygen desaturation (SpO2 ≤ 90%)
- 52.56% decrease in severe oxygen desaturation (SpO2 ≤ 85%)
- 34.92% decrease in apnea (≥ 15 secs)
- ~1/2 decreased odds of requiring assisted ventilation when capnography-guided care is used in outpatient GI endoscopy procedures
- 61% decreased odds of naloxone or flumazenil use when capnography is used in outpatient GI endoscopy procedures

**References:**