

# B·R·A·H·M·S PCT (Procalcitonin)

## Initiating antibiotic therapy for patients with suspected or confirmed lower respiratory tract infection (LRTI)<sup>1</sup>

PCT (ng/mL)	< 0.10	≥ 0.10 - < 0.25	≥ 0.25 - < 0.50	≥ 0.50
Ongoing Infection?	Very Unlikely	Unlikely	Likely	Very Likely
Interpretation	ABx Strongly Discouraged	ABx Discouraged	ABx Encouraged	ABx Strongly Encouraged

**Important Considerations:** Antibiotic therapy should be considered regardless of PCT result if the patient is clinically unstable, is at high risk for adverse outcome, has strong evidence of bacterial pathogen, or the clinical context indicates antibiotic therapy is warranted.

If antibiotics are withheld, reassess if symptoms persist/worsen and/or repeat PCT measurement within 6-24 hours.

In order to assess treatment success and to support a decision to discontinue antibiotic therapy, follow up samples should be tested once every 1-2 days, based upon physician discretion taking into account patient's evolution and progress.

## Discontinuing antibiotics for patients with lower respiratory tract infection (LRTI), or suspected or confirmed sepsis<sup>2,3</sup>

<b>Change in PCT Level</b>	OR	<b>Current PCT Level</b>
 <p>Decline from peak PCT &gt; 80% and Clinical Improvement</p>		<p>LRTI ≤ 0.25 ng/mL</p> <p>Sepsis ≤ 0.50 ng/mL</p>

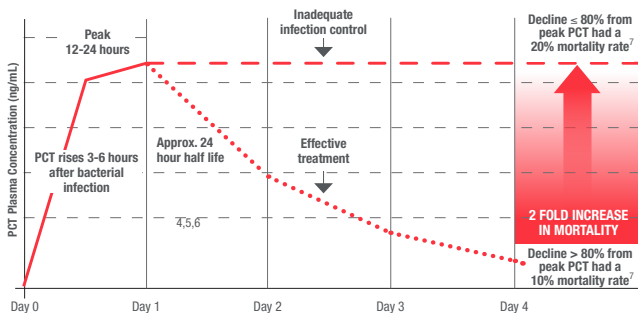
**Important Considerations:** If clinical picture has not improved and PCT remains high, re-evaluate and consider treatment failure or other causes.

1. Schuetz et al., Role of Procalcitonin in Managing Adult Patients With Respiratory Tract Infections, CHEST 2012; 141(4):1063–1073 2. Schuetz P., Christ-Crain M. et al., Effect of procalcitonin-based guidelines vs standard guidelines on antibiotic use in lower respiratory tract infections: the ProHOSP randomized controlled trial. Jama 2009; 302(10): 1059-1066. 3. Bouadma L., Luyt C. E. et al., Use of procalcitonin to reduce patients' exposure to antibiotics in intensive care units (PRORATA trial): a multicentre randomised controlled trial. Lancet 2010; 375(9713): 463-474.

*THERMO SCIENTIFIC™ B·R·A·H·M·S PCT™ results should be evaluated in context of all clinical and laboratory findings. If results do not agree with clinical finding, additional testing should be performed.*

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PCT values rise in relation to sepsis severity, providing clinicians with a valuable tool for assessing patients suspected of sepsis.<sup>4,5,6</sup>



PCT Plasma Concentration (ng/mL)	Possible Interpretations	4,5,6,8
< 0.05	Normal level.	
< 0.5	Low risk for progression to severe sepsis and/or septic shock.	
0.5 to 2.0	Systemic infection cannot be excluded. PCT levels should be measured again within 6 to 24 hours.	
≥ 2.0 to < 10	High risk for progression to severe sepsis and/or septic shock.	
> 10	Severe sepsis or septic shock. High risk of mortality.	

PCT can be measured on serum or plasma; the liquid chosen should be consistent throughout a patient's clinical course. Do not use citrate plasma tubes for specimen collection.

**Please Note:** PCT levels below 0.5 ng/mL do not exclude an infection, because localized infections (without systemic signs) may also be associated with such low levels. If the PCT measurement is done very early after the systemic infection process has started (usually < 6 hours), these values may still be low.

PCT values may be elevated independent of bacterial infection following surgical intervention or pro-inflammatory treatment.

**4.** Harbarth et al., Am J Respir Crit Care Med 2001; 164: 396-402 **5.** Meisner M, Procalcitonin – Biochemistry and Clinical Diagnosis, ISBN 978-3-8374-1241-3, UNI-MED, Bremen 2010. **6.** Müller B et al., Crit Care Med 2000, 28 (4): 977-983. **7.** Schuetz et al., Serial Procalcitonin Predicts Mortality in Severe Sepsis Patients: Results From the Multicenter Procalcitonin Monitoring SEpsis (MOSES) Study. Crit Care Med 2017; 45(5):781-789. **8.** Morgenthaler NG et al: Detection of procalcitonin (PCT) in healthy controls and patients with local infection by a sensitive ILMA. Clin Lab 2002;48(5-6):263-270.

Find out more at [thermofisher.com/aboutsepsis](http://thermofisher.com/aboutsepsis)

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