

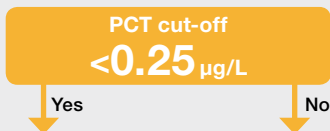
B·R·A·H·M·S PCT

Procalcitonin (PCT) in Lower Respiratory Tract Infection (LRTI)



PCT algorithms for antibiotic guidance

When to START antibiotics?

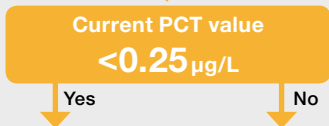
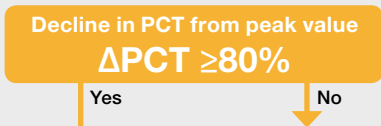


Bacterial infection unlikely
▶ ABx NOT recommended

Bacterial infection likely
▶ ABx recommended

When to STOP antibiotics?¹

Repeat PCT measurement every alternate day



Stop ABx

Continue/change ABx

$$\Delta\text{PCT} = \frac{\text{Peak PCT} - \text{Current PCT}}{\text{Peak PCT}} \times 100\%$$



PCT reference ranges for differential diagnosis of Lower Respiratory Tract Infections^{2,3}

PCT <0.1 µg/L

▶ **Indicates absence of bacterial infection***

Use of antibiotics strongly discouraged, also in the presence of impaired pulmonary reserve in AECOPD

PCT ≥0.1 – <0.25 µg/L

▶ **Bacterial infection unlikely***

The use of antibiotics is discouraged

PCT ≥0.25 – <0.5 µg/L

▶ **Bacterial infection possible**

Advice to initiate antimicrobial therapy

PCT ≥0.5 µg/L

▶ **Suggestive of the presence of bacterial infection**

Antibiotic treatment strongly recommended

* **Low PCT levels do not automatically exclude the presence of bacterial infection.** Such low levels may be obtained, e.g., during the early course of infections, in localized infections and in subacute endocarditis. Therefore, follow-up and re-evaluation of PCT in clinical suspicion of infection is pivotal. The PCT measuring technique should be chosen dependent on intended clinical use.

The PCT reference ranges are valuable guidelines for the clinician but they should always be interpreted in context of the patient's clinical condition. PCT serum concentrations are elevated in clinically relevant bacterial infections and continue to rise with the increasing severity of the disease. However, as an expression of individually different immune responses and different clinical situations, the same focus of infection may be associated with varying individual elevations in PCT concentrations. Antibiotic treatment should be started/continued on suspicion of infection, particularly in high-risk patients.

References **1** Schuetz et al. BMC Med 2011 Sep 22; 9: 107. **2** Meisner M. Procalcitonin – Biochemistry and Clinical Diagnosis. Bremen 2010. **3** Christ-Crain et al., Lancet 2004; 363: 600-607.

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Find out more at thermoscientific.com/procalcitonin

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