



**Title** Serum Procalcitonin Levels as a Diagnosis Tool in Bacterial Respiratory Tract Infections

**Agency** AVALIA-T, Axencia de Avaliación de Tecnoloxías Sanitarias de Galicia  
Edificio Administrativo San Lázaro, 15781 Santiago de Compostela, Spain;  
Tel: +34 881 541 831, Fax: +34 881 542 854; avalia-t@sergas.es, <http://avalia-t.sergas.es>

**Reference** Núm.2009/01-3.  
[www.sergas.es/Docs/Avalia-t/avalia-t-200901-3-procalcitonina.pdf](http://www.sergas.es/Docs/Avalia-t/avalia-t-200901-3-procalcitonina.pdf)

## Aim

To ascertain the clinical usefulness of procalcitonin (PCT) as a marker of respiratory tract infection of bacterial etiology.

## Conclusions and results

According to the bibliography reviewed, PCT appears to be a useful marker for diagnosing bacterial respiratory infections, and can be useful in reaching a differential diagnosis of respiratory infection caused by pneumococcus versus other bacteria. However, it does not appear to help diagnose respiratory infection due to atypical bacteria or viruses. Compared to clinical practice guidelines or empirical treatment, PCT-guided management of antibiotic treatment in patients with respiratory tract infections appears to reduce both the antibiotic prescription rate and the duration of drug treatment, but not the length of hospital stay.

## Recommendations

The high specificity of PCT means that it can effectively rule out the presence of bacterial infection, which in turn implies a reduction in the administration of inappropriate antibiotic treatment in nonbacterial infections. On the other hand, its low sensitivity would make it necessary to reassess the bacterial infection.

## Methods

A specific search strategy was designed for each of the following databases: Cochrane Library Plus; NHS Centre for Reviews and Disseminations; Clinical Trials.gov; Current Control Trials; Web of Science (WOK); MEDLINE; and EMBASE. This strategy was implemented in September 2010. Papers were selected on the basis of pre-established inclusion and exclusion criteria. Relevant data were systematically extracted from the studies selected and then summarized in evidence tables.

## Further research/reviews required

Since the studies were conducted in a hospital setting, some authors indicate that cost-effectiveness studies in different health settings (primary care, hospital emergencies, etc.) are necessary to ascertain the contexts in which PCT tests are more cost effective and to draw up the necessary protocols for using these tests in lower respiratory tract infections.