



“The purpose of this study is to analyse literature related to the position of centrally inserted central venous catheters and to review topics related to assessment of tip position.” Perin and Scarpa (2014).

Reference:

Perin, G. and Scarpa, M.G. (2014) Defining central venous line position in children: tips for the tip. The Journal of Vascular Access. September 2nd. .

Defining central venous catheter tip position in children [@ivteam](http://ctt.ec/91e1A+) #ivteam

Click To Tweet

Abstract:

**PURPOSE:** The purpose of this study is to analyse literature related to the position of centrally inserted central venous catheters and to review topics related to assessment of tip position of those catheters in children. Applications of specific techniques to PICCs (Peripherally Inserted Central Catheters) and umbilical venous catheter will also be reviewed.

**METHODS:** Analysis of 68 original manuscripts, 42 specifically related to the paediatric population, 26 related to the adult population. The papers analysed were published between 1949 and 2014; all articles were in English except one in Italian and one in German.

**RESULTS:** From the analysed literature, most of the guidelines recommend tip positioning at a level between the superior vena cava and the right atrium. Several methods have been described to evaluate tip position in the paediatric population, but none of those is considered completely reliable. The standard methods used to identify catheter tip position are radiography and fluoroscopy, but no specific landmark can be recommended in the paediatric population. The ultrasonographic approach has been investigated mainly for PICCs positioning in the neonatal population. The electrocardiographic method has been evaluated in the general paediatric population.

**CONCLUSIONS:** No specific recommendation can be given due to the low level of evidence. Ultrasound and ECG (electrocardiogram) techniques are a potential alternative to chest X-ray and further studies should be implemented to establish them. A wider application of these techniques may reduce neonatal and paediatric exposure to radiations and additionally reduce costs.

**Thank you to our partners for supporting IVTEAM**



