

MICHIGAN RISK SCORE FOR PICC-RELATED THROMBOSIS

The Michigan Risk Score (MRS) Tool Predicts risk of DVT in patients with peripherally inserted central catheter (PICC).
Use in patients ≥ 18 years old admitted to a medical service (i.e. not surgical). Do not use in pregnant patients.

Instructions for Use:

1. **Carefully consider** the risks and benefits of using a PICC, especially if the risk of thrombosis is high. Consider alternative devices (e.g. central venous catheters, ports, tunneled catheters) that can be placed in larger veins, if appropriate.
2. Calculate the patient's risk for PICC-related DVT.
What you need: Number of CVC(s) already placed for the patient at the time of PICC insertion, current WBC count, number of PICC lumens, patient history of VTE and active cancer

Another central venous catheter present At the time of index PICC placement	No (0 Points)		Yes (+1 Point)	
WBC $>12.0 \times 10^9 / \mu\text{l}$ At the time of index PICC placement	No (0 Points)		Yes (+1 Point)	
Number of PICC lumens	1 (0 Points)	2 (+1 Point)		3-4 (+2 Points)
History of DVT	Never (0 Points)			
	Yes, >30 days prior (+2 Points)			
	Yes, within 30 days (+3 Points)			
Active cancer On chemotherapy or admitted for cancer-related	No (0 Points)		Yes (+3 Points)	

MICHIGAN RISK SCORE	RISK CLASS	PROBABILITY OF DVT
0	Class I – Low Risk	0.9%
1-2	Class II – Intermediate Risk	1.6%
3-4	Class III – High Risk	2.7%
≥ 5	Class IV – High Risk	4.7%

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MICHIGAN RISK SCORE INFORMATION	
WHY USE?	<p>Use <u>prior</u> to inserting a PICC to estimate the risk of upper-extremity/catheter-related thrombosis.</p> <p>Can help support testing for thrombosis (e.g. ultrasound) in patients with vague symptoms but high risk for DVT.</p> <p>Can support decision for longer duration of anticoagulation in patients with confirmed DVT related to PICC (higher risk – longer duration).</p>
PEARLS/PITFALLS	<ul style="list-style-type: none">• The Michigan Risk Score for PICC-Related Thrombosis helps estimate the risk of developing upper-extremity thrombosis in patients that receive peripherally inserted central catheters (PICCs).• Strongest predictors for risk were:<ul style="list-style-type: none">○ Triple-lumen PICCs.○ PICCs placed in patients with a history of VTE in the past 30 days.○ PICCs placed in the setting of active cancer.• Derived and internally validated in a cohort of 22,000 patients that received PICCs on medical wards or critical care settings. Extrapolation to dissimilar populations might not yield similar results.• A Michigan Risk Score Class I score is not necessarily “low risk” (incidence of DVT ~1%).• Not validated in surgical patients or patients undergoing surgery with a PICC.• Not validated in pediatric patients (<18 years of age).

For more detail about these guidelines, please see –

[The Michigan Risk Score to Predict Peripherally Inserted Central Catheter-associated Thrombosis.](#)

**Note – This calculator is not yet externally validated and should therefore be used with caution.*



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