

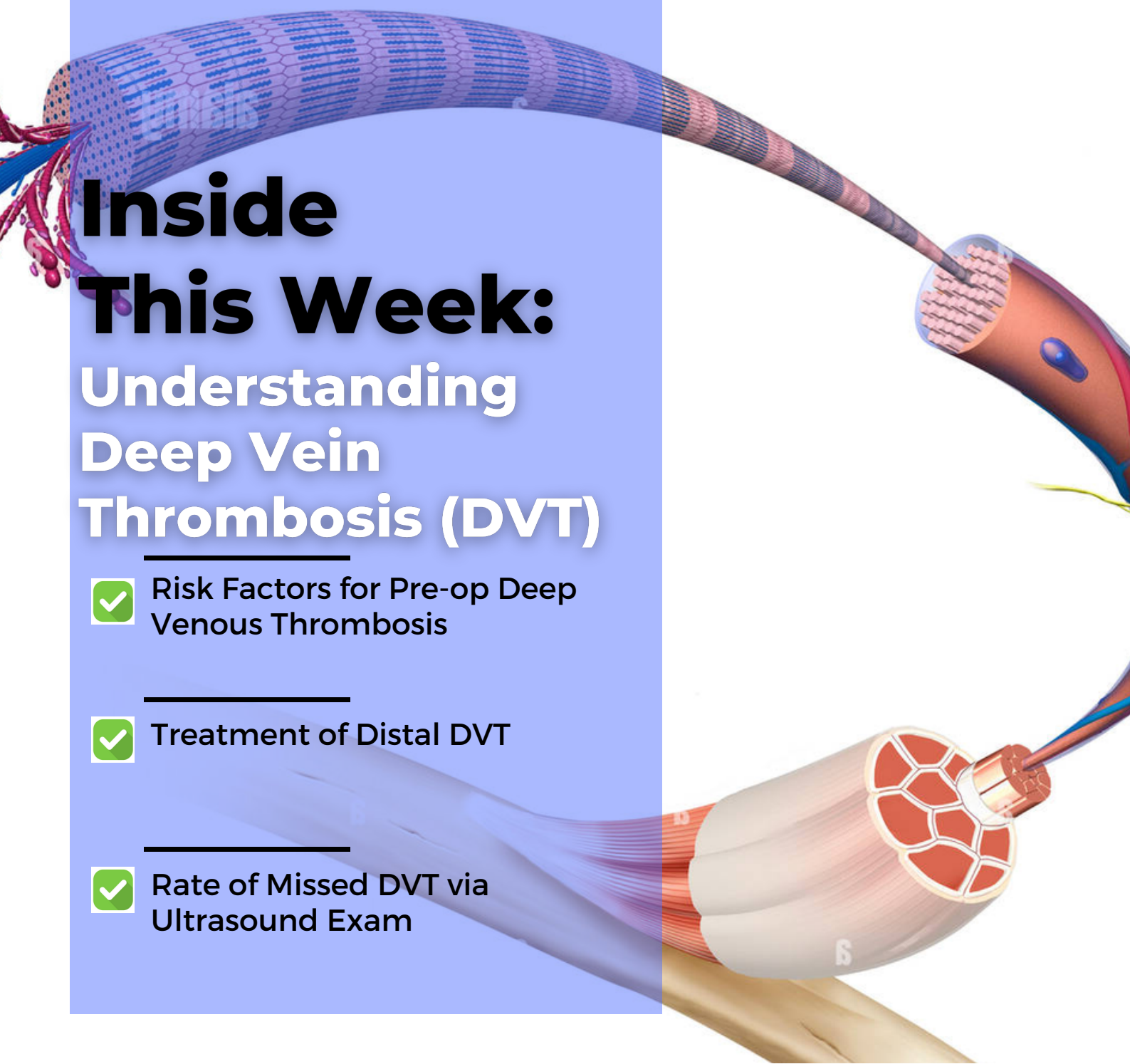


@physicaltherapyresearch

# RAPID RESEARCH

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June 2023



## Inside This Week: Understanding Deep Vein Thrombosis (DVT)

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- ✓ Risk Factors for Pre-op Deep Venous Thrombosis

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- ✓ Treatment of Distal DVT

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- ✓ Rate of Missed DVT via Ultrasound Exam

# RISK-FACTORS FOR PRE-OP DEEP VENOUS THROMBOSIS

JUNE 2023

[Click for Full Text  
\(Wang et al. 2022\)](#)

This systematic review and meta-analysis assessed the risk factors of preoperative DVT after hip fractures.



# KEY FINDINGS

**26 studies, 9823 patient included:**

## **Risk Factors for Preoperative DVT:**

Advanced age & Female gender

High-energy injury

Prolonged time from injury to admission

Prolonged time from injury to surgery

Low hemoglobin levels

Coronary heart disease

Dementia

Liver and kidney diseases & Pulmonary diseases

Smoking

High fibrinogen levels

Use of anti-platelet drugs

Elevated C-reactive protein levels

Low albumin levels (< 35 g/l)

History of thrombosis

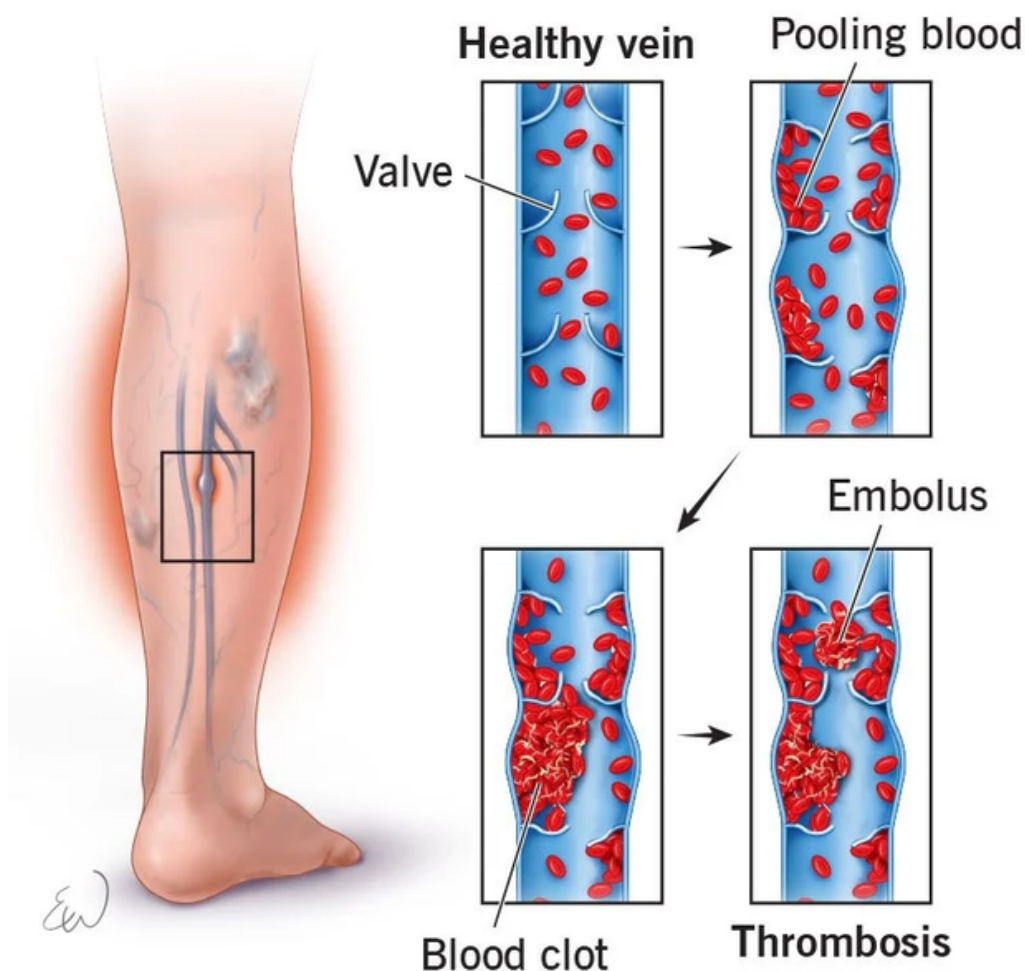
# MAIN TAKEAWAYS

**These findings suggest that factors such as age, gender, injury characteristics, medical conditions, laboratory values, medication use, and thrombosis history contribute to the risk of preoperative DVT.**

# TREATMENT OF DISTAL DVT

[Click for Full Text \(Kirkilesis et al. 2020\)](#)

This systematic review assessed the effects of different treatment interventions for people with distal (below the knee) deep vein thrombosis (DVT).



**8 studies, 1239 participants were included**

## **Anticoagulation vs. No Anticoagulation for Distal DVT Treatment:**

### **Risk Reduction with Anticoagulation:**

Vitamin K antagonist (VKA) significantly reduced the risk of recurrent venous thromboembolism (VTE) vs. none.

Anticoagulation also reduced the risk of recurrence of DVT.

There was no clear effect on the risk of pulmonary embolism (PE).

### **Bleeding Risks:**

No difference in major bleeding events.

Increase in non-major bleeding events with anticoagulation.

## **Reduced Recurrence with Longer Anticoagulation:**

Anticoagulation with a VKA for 3 months+ significantly reduced the incidence of recurrent VTE and DVT compared to 6 weeks of treatment.

# MAIN TAKEAWAYS

**There is benefit for people with distal DVT treated with anticoagulation therapy using VKA with little or no difference in major bleeding events although there was an increase in clinically relevant non-major bleeding when compared to no intervention or placebo.**

**The small number of participants in this meta-analysis and strength of evidence prompts a call for more research regarding the treatment of distal DVT.**

**RCTs comparing different treatments and different treatment periods with placebo or compression therapy, are required.**

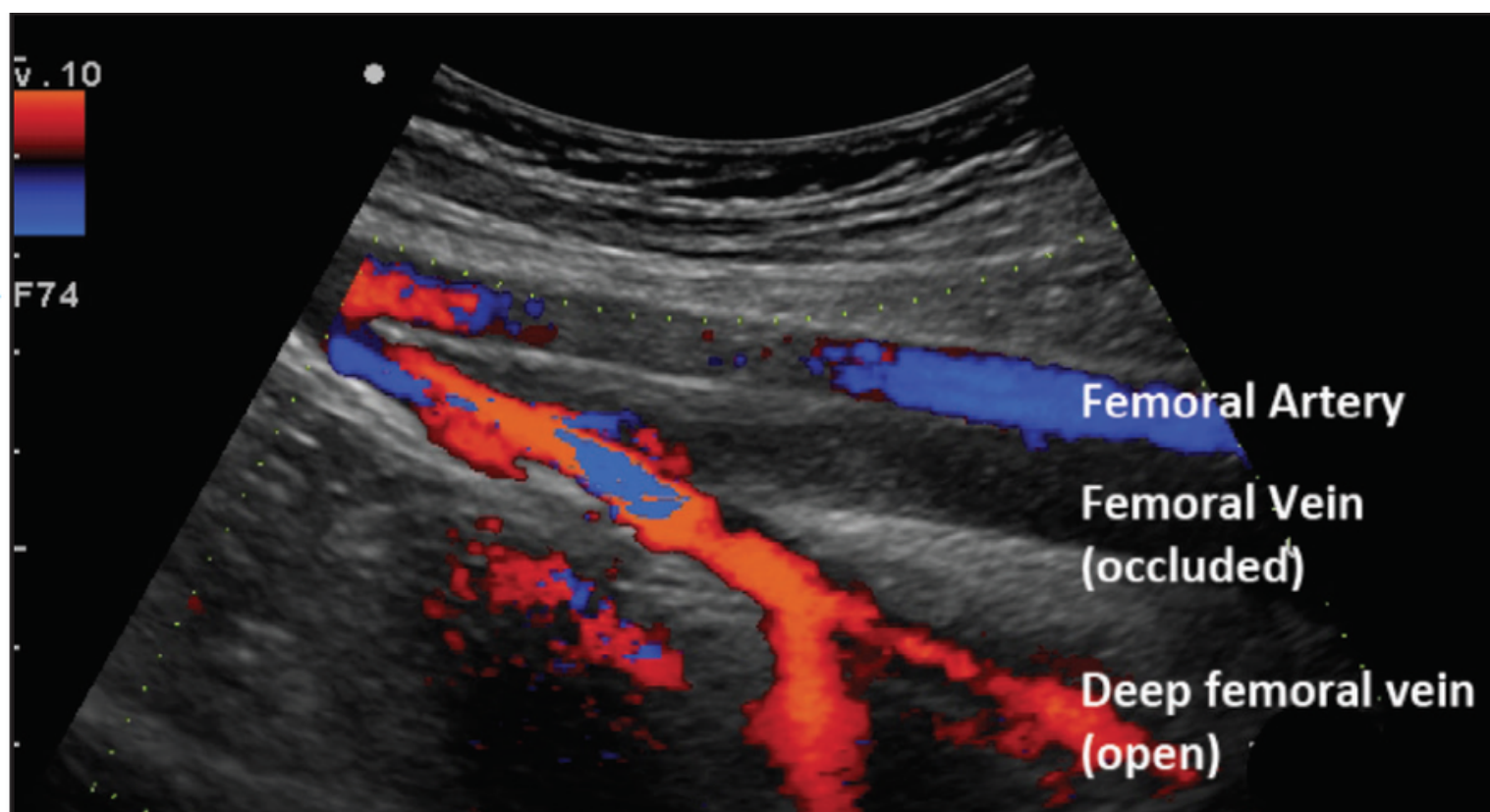


# RATE OF MISSED DVT VIA ULTRASOUND EXAM

[Click for Full Text  
\(Zhang et al. 2019\)](#)

This systematic review assessed whether the ultrasound (US) is a reliable approach in detecting lower-limb deep-vein thrombosis (DVT) in patients without symptoms of DVT.

Courtesy of I.M. Toonder, RVT.



# KEY FINDINGS

**26 articles, 41 studies, 3951 patients w/o symptoms of DVT**

## Ultrasound (US) Accuracy for Proximal DVT:

Sensitivity [59%]

Specificity [98%]

## US Accuracy for Distal DVT:

Sensitivity [43%]

Specificity [95%]

## US Accuracy for Whole-Leg DVT:

Sensitivity [59%]

Specificity [95%]

## Techniques for DVT Detection:

Pure compression Sensitivity [43%]

Pure color/doppler technique Sensitivity [58%]

Compression & Color/doppler technique Sensitivity [61%]

# MAIN TAKEAWAYS

**US could be a useful tool for diagnosing DVT, but it has a lower positive rate and a higher false negative rate.**

**The rate of missed diagnosis of lower-limb DVT by US amounts to 50% or so in the patients without symptoms of DVT.**

**The negative results do not preclude the possibility of DVT and if appropriate heightened surveillance and continued monitoring or try a more accurate inspection method is warranted.**

**The whole leg evaluation and color/doppler technique should be the preferred approach.**

# GIVE US YOUR FEEDBACK!

## MEMBERS

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We would greatly appreciate any feedback you have, as it helps us continually improve!

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