ASH CLINICAL PRACTICE GUIDELINES
TREATMENT OF PEDIATRIC VTE

ASH ISTH 2025 Guidelines for Treatment of Pediatric VTE

www.hematology.org/VTEguidelines

In 2025, ASH and ISTH updated guidelines on the treatment of VTE in pediatric patients. This document summarizes the 4 new recommendations added and the 16 recommendations which were updated to reflect new evidence. 11 recommendations from the 2018 guideline were not addressed in this guideline update, but are included in this summary for reference. This document is intended to be a quick reference guide. Please consult the full guideline manuscript for remarks and evidence profiles for each recommendation.

New Recommendations *Added to the 2025 Pediatric VTE guideline*

No.	Pediatric Population	Recommendation	Strength	Evidence Certainty	Changes from 2018
17	Pediatric patients with VTE	**Suggests** DOACs (Rivaroxaban / Dabigatran) over Standard of Care (LMWH, UFH, VKA, Fondaparinux)	✓	⊕⊕◯◯	New in 2025
18	Pediatric patients with VTE	**Suggests** Rivaroxaban over Standard of Care	✓	⊕◯◯◯	New in 2025
19	Pediatric patients with VTE	**Suggests** Dabigatran over Standard of Care	✓	⊕◯◯◯	New in 2025
20	Pediatric patients with VTE	**Suggests** either Rivaroxaban or Dabigatran* *Individual populations or jurisdictional availability may lead clinicians to choose one agent over the other	✓	⊕◯◯◯	New in 2025

DOAC: Direct Oral Anticoagulant; **LMWH:** Low Molecular Weight Heparin; **UFH:** Unfractionated Heparin; **VKA:** Vitamin K Antagonist

Recommendation & Evidence Rating ✓ Recommends ✗ Recommends against ✓ Suggests ✗ Suggests against High ⊕⊕⊕⊕ Moderate ⊕⊕⊕◯ Low ⊕⊕◯◯ Very Low ⊕◯◯◯

REFERENCE
Monagle P, Azzam M, Bercovitz R, et al. American Society of Hematology/International Society of Thrombosis and Haemostasis 2025 updated guidelines for treatment of venous thromboembolism in pediatric patients. *Blood Advances*. doi: https://doi.org/10.1182/bloodadvances.2024015328

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Updated Recommendations *Updated in 2025 to reflect new evidence*

No.	Pediatric population	Recommendation	Strength	Evidence Certainty	Changes from 2018
1	Symptomatic DVT or PE	**Suggests anticoagulation**, over no anticoagulation	✓	⊕◯◯◯	Strength down-graded from strong to conditional.
2	Clinically unsuspected DVT or PE	**Suggests *either* anticoagulation *or* no** anticoagulation	✓	⊕◯◯◯	”Asymptomatic” changed to “clinically unsuspected”
3	Select* patients with provoked VTE **Excludes patients with PE, recurrent VTE, persistent occlusive thrombus at 6 weeks, cancer-associated thrombosis, persistent antiphospholipid antibodies or major thrombophilia, and those with ongoing VTE risk factors—for whom 3 months of anticoagulation is suggested.*	**Suggests anticoagulation for 6 weeks** over anticoagulation for 3 months	✓	⊕◯◯◯	2018 rec. applied to all patients with provoked DVT or PE. Now suggests “6 weeks” whereas 2018 suggested “≤3 months”
4	Unprovoked DVT or PE	**Suggests anticoagulation for 6 to 12 months** over indefinite anticoagulation	✓	⊕◯◯◯	2018 rec. compared 6-12 mo. to “>6-12mo.” 2025 comparison is “indefinite” anticoagulation.
5	CSVT with and without hemorrhage secondary to venous congestion	**Suggests anticoagulation** over no anticoagulation	✓	⊕◯◯◯	Strength downgraded for CSVT without hemorrhage.
6	CSVT	**Suggests anticoagulation alone,** over thrombolysis followed by anticoagulation	✓	⊕◯◯◯	Direction changed from “*against* thrombolysis” to “*for* anticoagulation alone,” but no meaningful change to recommended clinical action
7a	Neonates and pediatric patients with RAT and: • high-risk features, *and* • low perceived bleeding risk	**Suggests anticoagulation** over no anticoagulation	✓	⊕◯◯◯	2018 rec. split into separate recs. for high-risk and non high-risk RAT.
7b	Neonates and pediatric patients with RAT and: • ***No*** high-risk features, *or* • unacceptable perceived risk of bleeding	**Suggests no anticoagulation** over anticoagulation	✓	⊕◯◯◯	2018 rec. split into separate recs. for high-risk and non high-risk RAT; anticoagulation no longer suggested for non high-risk RAT.
8	Neonates and pediatric patients with RAT who: • require antithrombotic treatment	**Suggests anticoagulation alone**, over thrombolysis followed by anticoagulation	✓	⊕◯◯◯	Direction changed from “*against* thrombolysis” to “*for* anticoagulation alone” to add clarity; but no meaningful change to recommended clinical action.
9	Neonates with RVT	**Suggests anticoagulation** over no anticoagulation	✓	⊕◯◯◯	No change.

DVT: Deep Vein Thrombosis; **PE:** Pulmonary Embolism, **VTE:** Venousthromboembolism **CSVT:** Cerebral Sinus Venous Thrombosis; **DVT:** Deep Vein Thrombosis; PE: Pulmonary Embolism; **RAT:** Right Atrial Thrombosis;

Recommendation & Evidence Rating ✓ **Recommends** ✗ **Recommends against** ✓ **Suggests** ✗ **Suggests against** **High** ⊕⊕⊕⊕ **Moderate** ⊕⊕⊕◯ **Low** ⊕⊕◯◯ **Very Low** ⊕◯◯◯

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Updated Recommendations *Updated in 2025 to reflect new evidence*

No.	Pediatric population		Recommendation	Strength	Evidence Certainty	Changes from 2018
10a	Neonates with *non-life-threatening* RVT		**Recommends anticoagulation alone, over thrombolysis** followed by anticoagulation	✓	⊕◯◯◯	Direction changed from "*against* thrombolysis" to "*for* anticoagulation alone."
10b	Neonates with life-threatening RVT		**Suggests thrombolysis followed by anticoagulation,** over anticoagulation alone	✓	⊕◯◯◯	No change
11a	Neonates and children with occlusive PVT, & children with non-occlusive PVT, post liver transplant PVT, or unprovoked PVT		**Suggests anticoagulation** over no anticoagulation	✓	⊕◯◯◯	No change.
11b	Neonates with nonocclusive PVT & children who have already developed portal hypertension		**Suggests no anticoagulation** over anticoagulation	✓	⊕◯◯◯	No change.
12a	SVT secondary to intravenous cannulation in upper limb		**Suggests no anticoagulation** over anticoagulation	✓	⊕◯◯◯	2018 rec. split into separate recs. for upper limb and lower limb / non-cannula related.
12b	SVT in upper limb which is non cannula-related or in lower limb associated with cancer or varicose veins		**Suggests anticoagulation** over no anticoagulation	✓	⊕◯◯◯	2018 rec. split into separate recs. for upper limb and lower limb / non-cannula related.
13	Proximal DVT		**Suggests anticoagulation alone,** over thrombolysis followed by anticoagulation	✓	⊕◯◯◯	Direction changed from "against thrombolysis" to "for anticoagulation alone."
14	PE, with	…evidence of right ventricular dysfunction, but no hemodynamic compromise	**Suggests anticoagulation alone,** over thrombolysis followed by anticoagulation	✓	⊕◯◯◯	Direction changed from "against thrombolysis" to "for anticoagulation alone,"
15		…hemodynamic compromise	**Suggests thrombolysis followed by anticoagulation** over anticoagulation alone	✓	⊕◯◯◯	No change.
16	Symptomatic CVAD-related thrombosis (no longer requiring venous access or with non-functioning CVAD)		**Suggests *either* immediate or delayed removal of CVAD**	✓	⊕⊕◯◯	Now suggests delayed *or* immediate removal; changed from suggesting delayed in 2018. Evidence upgraded to Low.

DVT: Deep Vein Thrombosis; **CSVT:** Cerebral Sinus Venous thromboembolism; **CVAD:** Central Venous Access Device; **PE:** Pulmonary Embolism; **PVT**: Portal Vein Thrombosis; **RVT:** Renal Vein Thrombosis; **SVT:** Superficial Vein Thrombosis

Recommendation & Evidence Rating ✓ Recommends ✗ Recommends against ✓ Suggests ✗ Suggests against High ⊕⊕⊕⊕ Moderate ⊕⊕⊕◯ Low ⊕⊕◯◯ Very Low ⊕◯◯◯

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2018 Recommendations – *Not Updated*

Supporting evidence not reviewed, recommendations not discussed/updated in 2025 guideline

No. (Year)	Pediatric population	Recommendation	Strength	Evidence Certainty	Changes from 2018
6 (2018)	Symptomatic DVT or PE	**Suggests against thrombectomy followed by anticoagulation**, in favor of anticoagulation alone.	✗	⊕◯◯◯	Not updated in 2025
7 (2018)		**Suggests against IVC filter, in favor of** anticoagulation alone.	✗	⊕◯◯◯	Not updated in 2025
8a (2018)	DVT/CSVT/PE	**Suggests against AT-replacement therapy** plus standard anticoagulation**,** in favor of standard anticoagulation alone	✗	⊕◯◯◯	Not updated in 2025
8b (2018)	DVT/CSVT/PE, *and* • failed standard AC • low AT levels	**Suggests AT-replacement therapy** plus standard anticoagulation, over standard anticoagulation alone	✓	⊕◯◯◯	Not updated in 2025
9 (2018)	Symptomatic CVAD-related thrombosis, requiring venous access	**Suggests no removal of a functioning CVAD**, over removal	✓	⊕◯◯◯	Not updated in 2025
10 (2018)	Symptomatic CVAD-related thrombosis	**Recommends removal** of a nonfunctioning CVAD or CVAD that is not needed, over no removal	✓	⊕◯◯◯	Not updated in 2025
12 (2018)	Symptomatic CVAD-related thrombosis *and* • worsening signs or symptoms despite AC, *and* • requiring venous access	**Suggests *ether* removal *or* no removal** of a functioning CVAD	✓	⊕◯◯◯	Not updated in 2025
13 (2018)	Symptomatic DVT or PE	**Suggests *either*** LMWH ***or*** VKA	✓	⊕◯◯◯	Not updated in 2025
24 (2018)	Congenital purpura fulminans due to homozygous protein C deficiency	**Suggests** protein C replacement, over anticoagulation	✓	⊕◯◯◯	Not updated in 2025
25 (2018)		**Suggests** anticoagulation + protein C replacement, over anticoagulation alone	✓	⊕◯◯◯	Not updated in 2025
26 (2018)		**Suggests either** liver transplant **or** no transplant	✓	⊕◯◯◯	Not updated in 2025

CSVT: Cerebral Sino Venousthromboembolism; **CVAD:** Central Venous Access Device; **LMWH:** Low molecular weight heparin; **PE:** Pulmonary Embolism; **VKA**: Vitamin-K Agonist

Recommendation & Evidence Rating ✓ **Recommends** ✗ **Recommends against** ✓ **Suggests** ✗ **Suggests against** **High** ⊕⊕⊕⊕ **Moderate** ⊕⊕⊕◯ **Low** ⊕⊕◯◯ **Very Low** ⊕◯◯◯

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Recommendation & Evidence Rating System

Recommendation Strength			
"Recommends…"	"Recommends against…"	"Suggests…"	"Suggests against…"
			

	Interpretation of Strong Recommendations	Interpretation of Conditional Recommendations
Patients	Most individuals in this situation would want the recommended course of action, and only a small proportion would not.	Most individuals in this situation would want the suggested course of action, but many would not. Decision aids may be useful in helping patients to make decisions consistent with their individual risks, values, and preferences.
Clinicians	Most individuals should follow the recommended course of action. Formal decision aids are not likely to be needed to help individual patients make decisions consistent with their values and preferences.	Different choices will be appropriate for individual patients; clinicians must help each patient arrive at a management decision consistent with the patient's values and preferences. Decision aids may be useful in helping individuals to make decisions consistent with their individual risks, values, and preferences.
Policymakers	The recommendation can be adopted as policy in most situations. Adherence to this recommendation according to the guideline could be used as a quality criterion or performance indicator.	Policymaking will require substantial debate and involvement of various stakeholders. Performance measures should assess if decision making is appropriate.
Researchers	The recommendation is supported by credible research or other convincing judgments that make additional research unlikely to alter the recommendation. On occasion, a strong recommendation is based on low or very low certainty in the evidence. In such instances, further research may provide important information that alters the recommendations.	The recommendation is likely to be strengthened (for future updates or adaptation) by additional research. An evaluation of the conditions and criteria (and the related judgments, research evidence, and additional considerations) that determined the conditional (rather than strong) recommendation will help identify possible research gaps.

Evidence Certainty	
High Certainty	
⊕⊕⊕⊕	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate Certainty	
⊕⊕⊕◯	We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low Certainty	
⊕⊕◯◯	Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very Low Certainty	
⊕◯◯◯	We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

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