

Scientific Summary – Latest news from science

Use of medical compression therapy as
thrombosis prophylaxis in pregnancy –
guideline-compliant, effective and safe

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Thrombosis prophylaxis in pregnancy using medical compression therapy – an effective and safe therapy measure

The risk of venous thromboembolism (VTE) is increased both during pregnancy as well as postpartum. While the risk is evenly distributed in all three trimesters, it rises significantly once again postpartum.¹

One of the main reasons for the increased VTE risk are hormonal changes and the related influence on the coagulation system and blood flow. Additionally, a mechanical flow obstruction in the iliac veins occurs in the course of pregnancy.^{2,3}

Causes of the VTE risk

Increased coagulation

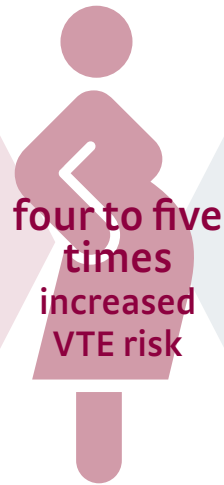
Changes within the hormonal system result in changed coagulation

Slowed blood flow

Increased gestagen levels reduce the vascular tone

Mechanical flow obstruction

Lowering of the child leads to a compression of the iliac vessels



Individual VTE risk factors

Individual factors can rise the VTE risk additionally. Amongst those

- **pre-existing factors**
(e.g. multiparity, multiple pregnancy, obesity, age > 35 years)
as well as
- **transient risk factors**
(e.g. hyperemesis, dehydration, pre-eclampsia, caesarian section)

Fig. 1: Increased VTE risk during pregnancy: Causes and risk factors¹⁻³

Relevance of thrombosis prophylaxis in pregnancy

As a deep vein thrombosis (DVT) can result in pulmonary embolism – one of the leading causes of death amongst pregnant women – thrombosis prophylaxis is of crucial meaning.⁴ There are both pharmaceutical and physical treatment options regarding DVT prophylaxis. When choosing between therapy options possible side effects on mother and child should always be considered.

VTE prophylaxis with anticoagulants

- ! Systemic use
- ! Pharmacological measure
- ! Increased bleeding risk
- ! Consideration of the individual benefit-risk-profile:

Pregnancy is a contraindication for numerous anticoagulants. Therefore, the use of drugs requires a **close arrangement** with the pregnant woman.

- **Heparins:** possible in case of medical necessity
- **Danaparoid:** not recommended for general use
- **Thrombin inhibitors:** use only if absolutely necessary
- **Factor Xa-inhibitors:** often not recommended or contraindicated
- **Vitamine-K-antagonists:** contraindicated*

VTE-prophylaxis with medical compression stockings

- ✓ Local external use
- ✓ Physical measure
- ✓ Low side effects
- ✓ Effective and safe

Considering the general instructions for use and contraindications **medical compression stockings** can be used in **pregnancy without any restrictions.**

The **positive effect of medical compression stockings** regarding the prevention of a venous thrombosis is scientifically proven.⁶

Fig. 2: Thrombosis prophylaxis in pregnancy – therapy options^{2,5,6}

* Exception: absolute indication for anticoagulation in case of life-threatening heparine intolerance

Recommendations of the German S3 guideline regarding VTE prophylaxis²

Regardless of risk group and aside of **basic measures for VTE prophylaxis** – such as early mobilisation, movement exercises, and instruction for self-exercises – **physical measures like compression** should be used in **all pregnant women, starting in early pregnancy.**

Recommendations of the German S2k guideline regarding medical compression therapy:⁷

The German S2k guideline recommends the use of **medical compression therapy** i. a. as **thrombosis prophylaxis in mobile patients.**

Conclusion:

In pregnant women, medical compression therapy is a guideline-compliant, **effective**, and **safe** therapeutic measure **with low side effects.**



Fig. 3: Advantages of medical compression therapy in pregnant women

¹ Konkle BA. Diagnosis and management of thrombosis in pregnancy. Birth Defects Res C Embryo Today. 2015;105(3):185-189.

² Encke A et al. German S3 guideline: Prophylaxis of venous thromboembolism (VTE). AWMF-registry number: 003-001; Status 10/2015. Online available at: <https://www.awmf.org/leitlinien/detail/II/003-001.html> (Last access: 2020, Oct 20th).

³ Mendoza E. Compression during pregnancy alleviates complaints [Article in German]. Ars medici 2013;19:965-966.

⁴ Dado et al. Pregnancy and Pulmonary Embolism. Clin Chest Med. 2018;39(3):525-537.

⁵ Please refer to the corresponding prescribing information

⁶ Ochalek K et al. Risk Factors Related to Lower Limb Edema, Compression, and Physical Activity During Pregnancy: A Retrospective Study. Lymphat Res Biol 2017;15(2):166-171.

⁷ Rabe E et al. German S2k guideline: Medical compression therapy. Status 12/2018. Online available at: <https://www.awmf.org/leitlinien/detail/II/037-005.html> (Last access 2020, Oct 20th).