



<b>Title</b>	<b>Screening for Thrombophilia in High-Risk Situations: Systematic Review and Cost-Effectiveness Analysis</b>
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<b>Reference</b>	Health Technol Assess 2006;10(11). April 2006. <a href="http://www.hta.ac.uk/execsumm/summ1011.htm">www.hta.ac.uk/execsumm/summ1011.htm</a>

## Aim

- To assess the risk of clinical complications associated with thrombophilia in 3 high-risk patient groups: 1) women who are prescribed oral estrogen preparations, 2) pregnancy and the puerperium, 3) patients undergoing major orthopedic surgery.
- To assess the effectiveness of prophylactic treatments in preventing venous thromboembolism (VTE) and adverse pregnancy outcomes in women with thrombophilia during pregnancy and VTE events in patients with thrombophilia undergoing major orthopedic surgery.
- To evaluate the cost effectiveness of universal and selective VTE history-based screening for thrombophilia compared with no screening.

## Conclusions and results

Four screening scenarios were assessed: 1) testing women prior to prescribing combined oral contraceptives and restricting prescribing to those tested negative for thrombophilia; 2) testing women prior to prescribing hormone replacement therapy and restricting prescribing to those tested negative for thrombophilia; 3) testing women at the onset of pregnancy and prescribing prophylaxis to those tested positive for thrombophilia; 4) testing all patients prior to major orthopedic surgery and prescribing extended thromboprophylaxis to those tested positive for thrombophilia.

Thrombophilia is associated with increased risks of VTE in women taking oral estrogen preparations, patients undergoing major elective orthopedic surgery, and adverse outcomes in pregnancy. There is considerable difference in the magnitude of the risks among different patient groups with different thrombophilic defects. Findings from this study show that selective screening based on prior VTE history is more cost effective than universal screening.

Irrespective of patient groups, selective screening based on the presence of previous personal or family history

of VTE prevented fewer cases of adverse clinical complications, but was more cost effective than universal screening in all 4 screening scenarios.

## Recommendations

Universal thrombophilia screening in women prior to prescribing oral estrogen preparations, in women during pregnancy, and in patients undergoing major orthopedic surgery should not be advocated. Findings from this study show that selective screening based on prior VTE history is more cost effective than universal screening.

## Methods

Systematic review and meta-analyses were conducted to:

1. Establish the risk of clinical complications associated with thrombophilia in women who use oral estrogen therapy, women who are pregnant, and patients undergoing major orthopedic surgery.
2. Assess the effectiveness of prophylactic treatments in preventing VTE and adverse pregnancy outcomes in women with thrombophilia during pregnancy and VTE events in patients with thrombophilia undergoing major orthopedic surgery.

An incremental cost-effectiveness analysis was conducted, from the perspective of the NHS in the UK. A decision analytical model was developed to simulate the clinical consequences of four thrombophilia screening scenarios.

## Further research/reviews required

- Refine the risks and establish the associations of thrombophilias with VTE among hormone users and inpatients undergoing orthopedic surgery.
- Establish the relative value of a thrombophilia screening program to other healthcare programs.