

## Publication

### A systematic review of cost-effectiveness analysis of screening interventions for assessing the risk of venous thromboembolism in women considering combined oral contraceptives

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**Author(s)** Ademi, Zanfina; Sutherland, C. Simone; Van Stiphout, Joris; Michaud, Jöelle; Tanackovic, Goranka; Schwenkglens, Matthias

**Author(s) at UniBasel** [Schwenkglens, Matthias](#) ; [Ademi, Zanfina](#) ; [Sutherland, Claudette Simone](#) ; [Van Stiphout, Joris](#) ;

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Use of combined oral contraceptives (COCs) by women increases the risk of venous thromboembolism (VTE), which can have a major impact on an individuals' quality of life. VTE is also associated with an increase in healthcare costs. Our aim was to systematically review cost-effectiveness analyses (CEAs) considering any screening for risk of VTE in women using COCs. The quality of reporting in each study was assessed, a summary of results was prepared, and the key drivers of cost effectiveness in each of the eligible CEAs were identified. A search strategy using MeSH terms was performed in MEDLINE, Embase, the Centre for Review and Dissemination (CRD) database including the Economic Evaluation Database from the UK National Health Service, and Cochrane reviews. Two reviewers independently screened and determined the final articles, and a third reviewer resolved any discrepancies. Consolidated Health Economic Evaluation Reporting Standards was used to assess the quality of reporting in terms of perspective, effectiveness measures, model structure, cost, time-horizon and discounting. Four publications (three from Europe, one from the United States) were eligible for inclusion in the review. According to current criteria, relevant elements were sometimes not captured and the sources of epidemiological and effectiveness data used in the CEAs were of limited quality. The studies varied in terms of type of costs assessed, country settings, model assumptions and uncertainty around input parameters. Key drivers of CEAs were sensitivity and specificity of the test, incidence rate of VTE, relative risk of prophylaxis, and costs of the test. The reviewed studies were too dissimilar to draw a firm conclusion on cost-effectiveness analysis about universal and selective screening in high-risk groups. The new emerging diagnostic tools for identifying women at risk of developing VTE, that are more predictive and less costly, highlight the need for more studies that apply the latest evidence and utilize robust methods for cost-effectiveness analysis. This information is required to improve decision making for this pertinent issue within personalized medicine.

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