

# New evidence confirms link between newer contraceptive pills and higher clot risks

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A study published by The *BMJ* today provides new evidence to confirm the link between newer contraceptive pills and higher risk of serious blood clots (known as venous thromboembolism or VTE).

The results show that pills containing one of the newer types of progestogen hormone (drospirenone, desogestrel, gestodene, and cyproterone) are associated with an increased risk of VTE than pills containing older progestogens (levonorgestrel and norethisterone).

The researchers, based at the University of Nottingham, say this is "an important clarifying study" that "has sufficient power to provide reliable comparative findings for different formulations of combined oral contraceptives."

About 9% of [women](#) of reproductive age worldwide use oral contraceptives, rising to 18% of women in developed countries and 28% of women in the UK.

Although the increased clot risk associated with combined oral contraceptives is well known, previous studies have used different methods to examine this link, so the relative risks associated with different combinations remain inconclusive.

The researchers, led by Yana Vinogradova, Research Fellow in Medical Statistics at the University of Nottingham, tried to address these differences to help explain the range of results.

They used prescription data from two large UK general practice databases to measure the associations between use of combined oral contraceptives and risk of VTE in women aged 15-49 years, adjusting for other known risk factors.

They found that current users of any combined oral contraceptive are at an increased risk of VTE compared with non-users of similar age and health status.

Compared with women not using oral contraceptives, women using older pills, containing levonorgestrel, norethisterone, and norgestimate, had about two and a half times increased risk of VTE. Women using newer pills, containing drospirenone, desogestrel, gestodene, and cyproterone, had around a four times increased risk of VTE.

Risks for women using newer pills were around 1.5-1.8 times higher than for women using older pills.

In absolute terms, the number of extra VTE cases per year per 10,000 treated women was lowest for levonorgestrel and norgestimate (six extra cases), and highest for desogestrel and cyproterone (14 extra cases).

The authors stress that oral contraceptives are remarkably safe, and point out that the reported three times increased risk of VTE in women using oral contraceptives in their study is still lower than the up to 10-fold increased risk of VTE in pregnant women.

They say women on combined contraceptive drugs "should not stop using them, but should consult their doctor and review their current type of pill at their next appointment if there are any concerns."

This is an observational study so no definitive conclusions can be drawn about cause and effect.

Nevertheless, the authors say they believe this study "has the statistical power and sufficient adjustment for relevant confounders to be regarded as an important clarifying study, which has produced the most reliable possible risk estimates using currently available UK prescription data."

The results "provide evidence for relevant authorities concerned with prescribing guidelines or those involved with regulation of safety of medicines," they conclude.

Vinogradova's study "addresses important questions about the risk of [venous thromboembolism](#) in women taking oral contraceptives, concluding that the risk is around twofold higher than the risk associated with older contraceptives," writes Professor Susan Jick at Boston University School of Public Health in an accompanying editorial.

These results, combined with those of a similar Danish study published in 2011, "clarify inconsistencies in earlier studies and provide important guidance for the safe prescribing of [oral contraceptives](#)," she concludes.

**More information:** Use of combined oral contraceptives and risk of venous thromboembolism: nested case-control studies using the QResearch and CPRD databases Editorial: Fresh evidence confirms links between newer contraceptive pills and higher risk of venous thromboembolism, *The BMJ*, [www.bmj.com/cgi/doi/10.1136/bmj.h2135](http://www.bmj.com/cgi/doi/10.1136/bmj.h2135)

Editorial: [www.bmj.com/cgi/doi/10.1136/bmj.h2422](http://www.bmj.com/cgi/doi/10.1136/bmj.h2422)

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