## In breastfeeding mothers, does use of combined oral contraceptives result in lower rates of breastfeeding continuation than progestin-only pills?

### Evidence-Based Answer

Combined oral contraceptives (COCs) probably have no more effect on breastfeeding continuation rates than progestin-only pills (POPs) (SOR: **B**, systematic review of low-quality RCTs).

A 2003 systematic review of 5 RCTs compared the effects of oral contraceptives on breastfeeding continuation or its surrogates (milk volume, need for supplemental feeds, infant growth).[1] The 5 RCTs were all poor quality. Data were not pooled because of study heterogeneity. Two of the trials compared COCs (norethindrone 1 mg and mestranol 80 mcg) with placebo. The first trial (N=100) reported shorter duration of lactation (67% continuation at 12 weeks for placebo vs 33% for COC; no *P* value provided). The other trial (N not given) found no difference in milk volume, lactation initiation, or infant growth when comparing COCs with placebo. Two other trials examined only POPs versus placebo.

The fifth trial, conducted by the World Health Organization (WHO), was a 3-center RCT of 314 postpartum patients that compared COCs with POPs.[2] No difference was noted between groups in rates of breastfeeding discontinuation at 24 weeks in COC versus POP groups at each center (30% vs 30%, 25% vs 25%, and 23% vs 23%). This study had a high rate of loss to follow-up (>30%), weakening the results. Overall, given the studies' poor methodological quality and conflicting results, the reviewers concluded that evidence was insufficient to make any recommendation regarding the use of hormonal contraceptives in breastfeeding women.[1]

Another systematic review of 8 trials (4 RCTs, 4 cohort studies) examined the effect of hormonal contraceptives on breastfeeding performance and infant health.[3] Two of the 4 RCTs were of poor quality. The 2 others were of fair quality but yielded contradictory results. One trial was partially randomized and showed lower rates of exclusive breastfeeding in the COC group (n=103) compared with placebo (n=188) (81% vs 92% exclusive breastfeeding in COC vs placebo group; *P*<.05), but only at 6 to 8 months; data taken at 2, 4, 10, and 12 months showed no difference in breastfeeding rates. Participants in this study were allowed to choose between methods of contraception and those receiving injectable placebo were advised to rely on continued lactation for reliable contraception, therefore likely skewing the results. The other fair-quality RCT is the WHO study described above. Again, reviewers found that the evidence was of low quality and inadequate to determine the effect of COCs on breastfeeding.

A recent double-blind RCT (N=127) published after the systematic reviews above examined the effects of COCs versus POPs on breastfeeding continuation when initiated at 2 weeks postpartum.[4] No significant difference was noted between groups in breastfeeding continuation at 8 weeks (64% vs 64%; *P*>.05) or 6 months (percentages not reported). Of the women who discontinued breastfeeding, 44% of the POP group and 55% of the COC group reported doing so because of a perceived lack of milk supply (*P*=.80). There was no difference in infant growth measurements at 8 weeks.

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## Does reduced sleep duration in adults without insomnia increase incidence of hypertension?

### Evidence-Based Answer

The answer is unclear. If reduced sleep does increase the risk of hypertension, the effect may be primarily in younger women (SOR: **C**, conflicting cohort studies).

A cohort study analyzed the effect of sleeping less than 5 hours on the incidence of hypertension in a group of 1,046 French adults (40–71 years old) recruited from primary care centers in Paris.[1] The patients filled out self-administered standardized health and sleep questionnaires and blood pressure was measured 3 times at a single visit. Investigators controlled for characteristics such as demographics, lifestyle, sleep-disordered breathing, cholesterol, depression, and anxiety. Individuals sleeping less

than 5 hours a night compared with those who were sleeping 7 or more hours had an increased likelihood of hypertension (adjusted odds ratio [aOR] 1.8; 95% CI, 1.1–3.1).

Another cohort study investigated the effect of sleep duration on the incidence of hypertension in 3,027 adults (35–79 years old) identified through public databases.[2] Participants completed a 7-day recall questionnaire measuring sleep duration. Blood pressures were taken 3 times in the sitting position at a single visit. Investigators controlled for patient characteristics such as age, education, marital status, body mass index (BMI), physical activity, alcohol and tobacco use, diabetes, and depressive symptoms, but not sleep-disordered breathing.

The rate of hypertension was greater in women who slept less than 6 hours compared with those who slept more (aOR 1.6; 95% CI, 1.1–2.5). More premenopausal women with shorter sleep duration experienced hypertension (OR 3.3; 95% CI, 1.4–7.8) compared with longer sleep duration. Sleep duration did not affect hypertension in postmenopausal women (OR 1.5; 95% CI, 0.92–2.4). There was also no association in men between sleep duration and hypertension (OR 0.93; CI, 0.62–1.4).[2]

An arm of the Coronary Artery Risk Development in Young Adults (CARDIA) trial studied the effect of sleep duration on the incidence of hypertension in a third cohort study.[3] The study group consisted of 670 African American and Caucasians patients aged 33 to 45 years (without hypertension at baseline) who were followed for 5 years. At baseline, blood pressure was measured and a questionnaire about sleep duration and quality was completed. Investigators controlled for patient characteristics such as BMI.

After 5 years, there was no correlation between shorter sleep duration (<6 hours) and new-onset hypertension compared with longer sleep duration (>6 hours) (aOR 1.3; 95% CI, 0.96–1.8).[3] EBP

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