



## Faculty of Family Planning and Reproductive Health Care Clinical Effectiveness Unit

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### **ORAL CONTRACEPTIVE USE AND CANCER RISK (September 2007)**

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#### **New evidence**

A paper published in September 2007 in the BMJ from Hannaford *et al* has reported findings on the use of oral contraceptives and cancer risk.

#### **Key findings**

- **contraceptive pill use is associated with a 12% decrease in the risk of developing cancer overall**
- **there is a statistically significant reduction in the rates of large bowel or rectal cancer and cancer of the uterine body or ovaries**
- **there are no differences between ever and never users in their risk of breast cancer**
- **there was no increase in the risk of cancers of the lung, cervix, central nervous system overall**
- **there was a very small increased risk in cervical cancer in women using OC for  $\geq 8$  years (rate 38 per 100 000 woman years)**

#### **CEU response**

This study supports the use of the oral contraceptive pill as a safe and effective method of contraception. The study confirms findings from other studies about the protective effects of oral contraceptive use in reducing the risk of certain types of cancer. The very small increase in the risk of cervical cancer in women using oral contraception long term ( $\geq 8$  years) supports findings from previous studies. This increased risk may be an overestimate as the study began before the UK national cervical screening programme was established. In addition, the majority of women were using pills with more ethinylestradiol than in current use today. Women who wish to use contraceptive pills for longer than 8 years can be reassured that the benefits of use outweigh any risks and they should be encouraged to participate in the routine 3 year cervical screening programme.

#### **About the study**

Cohort studies are useful for investigating the overall balance of risks and benefits associated with an exposure. This large inception cohort study used data from the Royal College of General Practitioners (RCGP) Oral Contraception Study and included over one million women years of observations. Most of the women in the

study are now postmenopausal. Although there were large losses to follow up no major systematic biases are suggested. Most (75%) of the pills used were combined oral contraceptives containing >50 micrograms ( $\mu\text{g}$ ) of ethinylestradiol (EE). Only 12% of women were using a pill with < 50  $\mu\text{g}$  EE and 10% were using a progestogen-only pill. Only 566 women had used exclusively products containing < 50  $\mu\text{g}$  EE.

The RCGP Oral Contraceptive Study recruited 46,000 women over a 14 month period beginning in 1968. Every six months General Practitioners (GP) provided information on the women's health. In addition, in the mid 1970's three quarters of the women were flagged at the NHS central registries (Scotland & England) so that deaths and cancers were notified to the study even if women had left their recruitment GP. The cancer risks were calculated using two sets of data. The main dataset contained 744 000 woman years of observation for ever users of oral contraceptive (OC) and 339 000 women years for never users. The corresponding values for the GP data set were 331 000 and 224 000 woman years. The main data set included cancers notified by the central NHS registries after women had left their recruiting GP. The GP dataset related to cancers reported while the women remained registered with their recruiting GP.

**The main data set reported a 12% reduction in risk of cancers overall** (adjusted relative risk RR 0.88, 95% confidence intervals, CI 0.83-0.94). The risk estimates in the smaller GP data set were less precise, many results were not statistically significant and a more modest 3% reduction in cancer risk with oral contraceptive use was reported. These overall risk reductions are average effects among pill users. A 12% reduction equates to approximately one fewer case of cancer for every 2200 women who have used the pill for a year and 3% equates to one fewer case of cancer for every 10000 women.

**The smaller GP data set was used to look at duration of oral contraceptive use and cancer risk.** Comparatively few women – less than a quarter of pill users in the study used oral contraceptives for  $\geq 8$  years. In the GP data set **long term oral contraceptive use ( $\geq 8$  years) was associated with a 22% increase in the risk of any cancer** (adjusted relative risk RR 1.22, 95% confidence intervals CI 1.07 to 1.39) **and in particular cervical cancer** (adjusted RR 2.73, 95% CI 1.61 – 4.61) and central nervous system or pituitary cancers (adjusted RR 5.51, 95% CI 1.38 – 22.05). As can be seen confidence intervals are wide. A statistically significant decrease in the risk of ovarian cancer is seen with prolonged use (adjusted RR 0.38, 95% CI 0.16 – 0.88). The protective effect of OC use on ovarian cancer risk lasts for at least 15 years after stopping. For both ever and never users the risk of cancer increases with age and smoking.

## Reference

Hannaford P, Selvaraja S, Elliot, A, Angus V, Iversen L and Lee A. **Cancer risk among users of oral contraceptives: cohort data from the royal College of General Practitioner's oral contraceptive study.** British Medical Journal September 2007 ([www.bmj.com](http://www.bmj.com))