



## Update on Oral Contraceptives

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Oral contraceptive pills are an effective means of preventing pregnancy only if used in the proper way (missed pills are a common cause of contraception failure). Two main kinds of birth control pills exist in the Canadian market namely combination pills and progestin-only pills. The aim of the present editorial is to highlight some of the major points surrounding oral contraceptive pills utilization. We gathered our information from clinical practice as well as from Rowan et al., Shrader et al. and the online website "uptodate" [1-3].

Combination oral contraceptives mainly act by estrogen-induced inhibition of mid cycle luteinizing hormone (LH) surge, so that ovulation does not occur. The progestin-related mechanism of contraception involves rendering the endometrium less suitable for implantation and altering cervical mucus to be less permeable to penetration by sperms.

Combination pills contain estrogen and progestin hormones and are divided into monophasic and multiphasic regimens. Multiphasic regimens, in turn, include biphasic, triphasic and quadriphasic pills. Quadriphasic pills are not currently available in Canada. No advantages are reported to the multiphasic regimens and monophasic pills are common in initial contraceptive use. Monophasic (one-phase) pills have the same amount of estrogen and progestin. Biphasic pills (two-phase) pills change the level of the hormones once. Triphasic (three-phase) pills contain three different doses of hormones. Quadriphasic (four-phase) pills have four different doses of the hormones in the combination. While progestin-only pills or the mini-pill are safe to use in nursing mothers because of their low pregnancy risk, patients who are unable to use estrogen because of a past history of blood clots can benefit as well from progestin-only pills. On the contrary, progestin-only pills are not a good choice for patients who have normal fertility.

It is essential to know that oral contraceptive pills have to be taken at the same time of each day, especially for progestin only pills in order to maintain contraception. Failure to do so will reduce their contraceptive protection. Contraceptive efficacy is impaired by malabsorption, vomiting and diarrhea. It is also impaired by

concomitant administration of other medications such as Rifampin. Oral contraceptives have to be started within the first five days of the menstrual cycle or the first Sunday after menses starts in order to be effective in birth control. The first day of the cycle is calculated from the first day of menstruation. However, it is essential to know that if taking the pills is started any other time during the menstrual cycle; they have to be used for 7 consecutive days before they are effective in birth control. As such, a back-up method, such as condom use, is usually recommended.

Oral contraceptives are not suitable for all patients. The World Health Organization discourages the use of oral contraceptives when certain conditions are present including being  $\geq 35$  years old and actively smoking  $\geq 15$  cigarettes daily, having thromboembolism, breast cancer, cirrhosis etc.

Oral contraceptive pills are packaged in 21 and 28 pill packages. In the 28 pill packages, only 21 pills contain hormones and the remaining 7 pills contain placebos. Yaz 28 and Loestrin 24 Fe contain 24 hormone pills and 4 placebo pills. When monophasic contraceptive pills are used continuously with no placebo pills, breakthrough bleeding will not be encountered. This placebo pills skipping is not used with biphasic and triphasic pills because of a consequent risk of bleeding and pregnancy.

Standard oral contraceptives contain 30 to 35 mcg of ethinyl estradiol, but recently 20 mcg pills have been made available. Emergency contraceptive pills or morning-after pills (Plan B<sup>®</sup>) are usually taken with 72 hours of unprotected sex. Emergency contraceptive pills disrupt ovulation or fertilization and thus prevent contraception. In Canada, Plan B<sup>®</sup> is a high dose of progestin-only pills. Plan B<sup>®</sup> uses the progestin levonorgestrel in a dose of 1.5 mg, either as two 750  $\mu$ g doses 12 hours apart, or as a single dose.

In conclusion, oral contraceptive pills are a good choice for contraception if taken consistently in patients with no underlying unacceptable health risk. It is recommended to start with the monophasic pills rather than multiphasic pills.

### References

1. Rowan SP, Someshwar J, Murray P (2012) Contraception for primary care providers. *Adolesc Med State Art Rev* 23: 95-110.
2. Shrader SP, Hall LN, Ragucci KR, Rafie S (2011) Updates in hormonal emergency contraception. *Pharmacotherapy* 31: 887-895.
3. [www.uptodate.com](http://www.uptodate.com)

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