

## The Hormone Band-Aid

**According** to a study by the National Survey of Family Growth, only 42% of women who use the birth control pill do so for contraception **exclusively**. From painful or heavy menses to acne and migraines, oral contraception is often the "go to" therapy for women of reproductive age when it comes to symptoms that are hormone related. The same survey estimated that more than 750,000 women (and girls) use "the pill" even though they have not yet been sexually active. With an estimated 11.2 million women in the United States currently using oral contraceptive pills (OCPs), the question about how these medications affect women's hormone levels, and if, or how they are helping to manage their symptoms, is a very important one.

Most OCPs consist of a low dose of an estradiol derivative (ethinyl estradiol) and one of several synthetic progestins, although there are some that do not contain estrogen (progestin only pills). While the progestins typically bind to progesterone receptors, they are not to be confused with progesterone that the body produces naturally or bio-identical progesterone that is often supplemented. There is significant variance in the pharmacokinetics of progestins vs. progesterone including a significantly longer half-life and a varying affinity for receptors.

Some of the most common progestins on the market include: medroxyprogesterone, norethindrone, levonorgestrel, norgestimate and drospirenone. These compounds all have a similar mechanism of action: they prevent the mid-cycle release of LH and reduce FSH levels, thereby inhibiting ovulation. Because LH and FSH also stimulate estrogen and androgen production in the ovary, suppression of these pituitary hormones often results in a reduction in overall estrogen burden and a decrease in androgen production that can have a profound effect on symptoms such as acne. Unfortunately, because these medications are not addressing the underlying reasons for hormonal imbalance, many symptoms may return upon discontinuation of the pill. This can be a problem for women who are put on these therapies in their teens to reduce

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their menstrual cramps or manage their acne who, when planning a family a decade or two later, find that the same symptoms may return.

Testing the hormone levels of a woman who is on birth control can be tricky. The primary source of progesterone is the corpus luteum, which is derived from the follicle after the egg is expelled. When ovulation is prohibited, there is no corpus luteum, and therefore no ovarian progesterone is produced. For this reason, you can expect progesterone levels to be very low in women who are currently taking oral contraceptive pills (progestins are not measured by the laboratory test systems because they are molecularly different from progesterone). Ideally, sex hormone analysis for these patients should occur once OCPs have been discontinued and an ovulatory cycle has returned, although this can vary from 1-6 or more months after discontinuation. We often recommend you wait until the patient has had at least one menstrual cycle beyond the withdrawal bleed that occurs when they first stop the pill and then wait until day 19-21, or mid-luteal phase, to collect.

For more information on the ins and outs of the various types of hormonal birth control and how to better serve the millions of women who choose this therapy join us for our next webinar "Birth Control: You've got questions, we've got the answers" on December 11th. [Click here](#) to register.

### Resources

- 1. <http://www.guttmacher.org/pubs/Beyond-Birth-Control.pdf/p>

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